INDUSTRIAL EQUIPMENT NEWS

JANUARY - 1952
VOL. 20 • NO. 1

The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

What's New IN EQUIPMENT, PARTS, MATERIALS

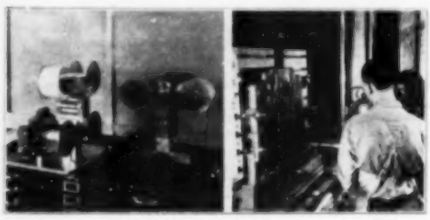
AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries

BREVITY—Identify by IEN-1 if you write the maker

CONTROL . . Motor driven tape actuates motors for machine control

Source: DACO MACHINE & TOOL CO.
200-04 Tillary St., Brooklyn 1, N. Y.



Electrical mechanical brain

Robot Machinist designates new equipment on which basic development has been completed by the company to make automatic the successive position and feed settings on a machine and to engage and disengage the machine movements in predetermined sequence and time intervals. The company is prepared to design the equipment for specified installations, primarily on machine tools of various types that are to be employed in production lines on long runs.

The equipment, as developed at present, consists of a punching mechanism, to the left in the illustration, where actuating holes for electric contacts are put in the tape. Number and positions correspond with the movements required at the machine. To the left is the motor-driven translating mechanism on which the tape is placed so electric contact fingers ride upon it. These fingers make contact through the perforations as the tape is moved forward or break the contacts as the holes pass by. Circuits to motors built into the controlled machine are thus closed and opened to engage, operate and disengage the machine movements.

The translator can be located in any convenient position with electrical connection to the controlled machine. Perforated tapes can be removed and stored at the end of a run ready for the next repeating run.

BREVITY—Identify by IEN-2 if you write the maker

BENDING . . Foot operated machine rolls flat work over a forming blade

Source: KILHAM ENGINEERING SALES INC.
1412-A Packard Bldg., Philadelphia 2, Pa.

Duplicates accurately

A foot pedal on this new Bendit No. 15 machine is depressed to pivot a hardened-steel roller upward across the face of an adjustable forming blade. The blade also acts as a hold-down clamp for work to be bent in the machine. Flat mild steel to 15 in. in width by 18 gage represents capacity in the bending operation.

The machine also will handle 1½ by ¼-in. or ⅝ by $\frac{3}{16}$-in. strip, ¼-in. pipe, ¾-in. round bar stock. It can be employed to make a box measuring 15 by 15 by 5 inches. Bend radius is minimum at $\frac{1}{32}$ inch. Dimensions are 22 by 22½ in. by 47 inches. Weight is 200 pounds.

The forming blade is secured by socket cap screws on a T-shaped tubular backing member, pivoted at the rear of the machine and provided with longitudinal adjustment so the blade can be positioned at the front for given work. An adjustable hand-operated clamp is brought down on top of the tubular member to clamp the work under the blade. A gage is positioned on the machine table to set the work as required under the blade.

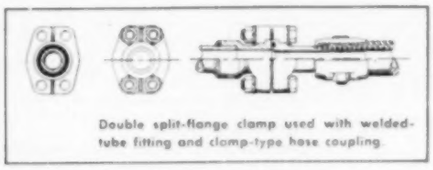
Standard equipment includes a blade measuring 14¾ in. in width and one measuring 5 in. in width, each with a $\frac{1}{32}$-in. inside bending radius. There is also a 10-in. round-bar clamp presenting a ⅝-in. inside bending radius for wire and tubes.

JOIN
THE MARCH OF DIMES
TO
FIGHT INFANTILE PARALYSIS

BREVITY—Identify by IEN-3 if you write the maker

PIPE FITTING . . O-ring design with split flange for quick assembly

Source: ANCHOR COUPLING CO.
Fourth & E. Church Sts., Libertyville, Ill.



Double split-flange clamp used with welded-tube fitting and clamp-type hose coupling

Patents are pending

An O-ring assembled in a ring groove at the end of this new fitting compresses on a finished machine surface or on the end of a mating fitting. It forms a leak-proof joint as soon as a split clamping flange is applied and tightened in place. The O-ring seals against leakage of hydraulic pressure in high, medium and low-pressure services. It can be employed also on suction return lines. The fitting itself is available in a range of designs in straight and angle styles for application on pipe, tube, and one or two-wire braided hose ranging in size from ½ to 2 inches.

The fitting permits the use of short stiff lengths of hose since no deflection is involved in making up a joint. The bolt holes in the two clamp parts are located to distribute holding force evenly and to prevent tilting.

BREVITY—Identify by IEN-4 if you write the maker

ENGINES . . Fluid in capsules for cold weather engine starting

Source: CALIFORNIA OIL CO.
7710 Empire State Building, New York 1, N. Y.

Shot in the arm for cold engines

Gelatine capsules in 7 and 17-cc. sizes are now employed to package and handle the company's Chevron engine-starting fluid with which difficulty in cold-weather starts for diesel and gasoline engines is eliminated. One or two of the capsules are dropped into a housing that mounts on the control panel for the engine. Then a cover is screwed down. A puncturing plunger in this cover presses into the capsule so the fluid will run by gravity to a priming plunger in a line leading to injection nozzles that assemble permanently on the engine.

The fluid injected into the engine ignites readily, serves to turn the engine over and keep it turning while the regular fuel is being started. A typical automotive diesel engine can be started easily in about 10 sec. at 40 deg. below zero.

The puncturing housing and the injection plunger and fittings list at about $18. The 7-cc. capsules packaged 24 to a metal can, are about $2.15 per can. Cost of a 17-cc. capsule is about 20 cents individually.

BREVITY—Identify by IEN-5 if you write the maker

POLISHING . . Impregnated cotton in cellophane wrapped open end rolls

Source: EMBREE MFG. CO.
8-12 W. Mravlag Place, Elizabeth 4, N. J.

Samples on request, naming job

Rollies trade names a new roll-type pad made of cotton or other suitable fibrous material which is impregnated with any one of a variety of compounds for buffing, oiling, polishing. The material is rolled inside a cellophane ring which is left open at both ends. The completed unit is rubbed over a work surface. The compound issues from the fabric as the operation proceeds to provide controlled flow without waste.

Application includes finishing of metal parts, polishing operations in manufacture of jewelry, protective oiling for metal surfaces, buffing and polishing optical lenses, furniture finishing. Sizes range from ⅝ to 3 in. in diameter.

Price is about 1½ cents each in quantities of 5,000 or more for units measuring 1¼ in. in diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

PRODUCT INFORMATION IS MORE VITAL NOW THAN EVER

WHAT DO YOU NEED?

READER SERVICE FORM . . Look between pages 16 and 17 or 92 and 93 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.

From a Plant Engineer

"The short concise descriptions in IEN are very desirable. We have gotten a lot of leads to new equipment from Industrial Equipment News".

Departments

READER SERVICE FORM — Pages 16-17 and 92-93
To assist you in securing the information you want

SUBJECT INDEX — Pages 105-107
With our four-step suggestion on how to use it

WORKING OR MELTING — Page 4
Suggestions on getting steel scrap into circulation

NEWS NOTES — Page 24
Reviews of unusually helpful literature and services

NEW LITERATURE — Page 76
Condensed reviews of current manufacturers' catalogs

IDEAS FOR YOU — Page 52
Items of current news interest to keep you posted

"I WISH I HAD" — Page 108
Requests we cannot answer, printed in the hope you can

Our Selections in This Issue

CLEANING — Page 13
Degreasing unit uses standard steel drum as the tank

GAGE — Page 2
For film thickness, measures by visual comparison

HANDLING — Page 97
Accessory equipment to apply with Nestler tote boxes

HEATING — Page 44
Flexible electric cable prevents freezing, melts ice

IDENTIFYING — Page 3
Visitor's pass to control his movement in a plant

LATHE — Page 99
Hand screw machine, three sizes take ⅜ to 1 in. stock

LUBRICATING — Page 27
Wax coolant for hack saw blades, routing cutters

METALS — Page 26
How to identify them for scrap salvage and other uses

NAMEPLATE — Page 40
Laminated plastic for service temperature to 275 deg. F.

STEELS — Page 32
How to select and use steel for plastic molding dies

STORING — Page 23
Desiccant container for indicator cards and silica gel

THOMAS' REGISTER — Page 50
1952 Edition lists all products and their makers

W. E. Tisch, Editor & V. Pres.
F. Morr. Smith, V. Pres. in Charge

THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N. Y.— LOngacre3-1546

HELP TO CONSERVE PAPER
MAKE THIS ISSUE DO DOUBLE WORK
FILL IN AND SEND ALONG TO OTHERS
INTERESTED IN PRODUCT INFORMATION

- ☐ *Plant Operating Mr.* _____
- ☐ *Production Mr.* _____
- ☐ *Engineering Mr.* _____
- ☐ *Product Design Mr.* _____
- ☐ *Purchasing Mr.* _____
- ☐ _____

▼ BREVITY—Identify by IEN - 6 if you write the maker ▼

Over forty years of Bearing research
and creative engineering
make New Departure Ball Bearings
top performers in modern machinery

Nothing Rolls Like a Ball

NEW DEPARTURE
BALL BEARINGS

▼ BREVITY—Identify by IEN - 7 if you write the maker ▼

FREE! 32-PAGE HANDBOOK
SHOWS HOW TO STOP CONDENSATION DRIP

NoDrip

Stops Drip from:
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

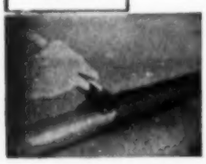
Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

LOW COST — EASY TO APPLY

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.

HANDBOOK SHOWS HOW

Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.



Send for your Free Handbook Now!

J. W. MORTELL CO.
Technical Coatings Since 1895
Dept. IE, Kankakee, Ill.

▼ BREVITY—Identify by IEN - 8 if you write the maker ▼

Raymond Loewy
IN HIS NEW BOOK says:

A nuisance that we have to guard against is defacement. One of humanity's strongest urges is the desire to engrave one's name on anything that can be dented, scratched, or embossed. Some go so far as to engrave (or tattoo) their names on their own skins.

In transportation it is a major problem. We dare to protect bulk heads, pure panels, toilet rooms, etc., from the urge of Joe to sketch a little fresco announcing to the world that he loves Julie. Or that the sitting position is favorable to the thinking process, or that So-and-So is a so-and-so, etc., etc. This calls for the use of certain non-defaceable materials.

(From "NEVER LEAVE WELL ENOUGH ALONE")
—Raymond Loewy

• RIGIDIZED METALS are three dimensional, design-strengthened and textured to conceal all dents, scratches, doodles and scuffs—a feature that reduces maintenance costs considerably in an unlimited variety of product applications. Other features: added rigidity, reduced gages for metal conservation; impact resistance, buckling strength; glare resistance; versatile fabrication.

WRITE on your company letterhead for a copy of the RIGIDIZED METALS Conservation Handbook today.

U.S. & Foreign Patents

Rigidized Metals Corporation

6641 OHIO STREET BUFFALO 3, N. Y. CABLE ADDRESS "RIGIDIZED"
Offices in Principal Cities in the U. S. and Canada

▼ BREVITY—Identify by IEN - 9 if you write the maker ▼

GAGE . . For film thickness, measures by visual comparison

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Manual provides instructions

A glass plate in this new Step Gage is enclosed in a plastic housing after it has been coated with succeeding films of barium stearate to make up successive layers ranging in thickness from 1 to 16 microinches. Overlapping steps appear as a series of colored stripes when the gage is illuminated by white light, each color representing thickness at that step. The gage serves as a standard for comparison with other films that reflect interference colors such as those produced by evaporation, sputtering, plating. Overall range is 2 to 16 microinches for the new gage.

▼ BREVITY—Identify by IEN - 10 if you write the maker ▼

PAINTING . . Masking tape, self-adhesive, 1/4 to 27-in. width

Source: BEHR-MANNING CORP.
P. O. Box 808-A, Troy, N. Y.

Protects the covered areas

Behr-Cat No. 113 is a new self-adhesive masking tape to cover areas on anodized aluminum and magnesium as well as on castings of these materials and their alloys. It is suited particularly for applications where the work is to be subjected to high temperature. The tape is available in rolls 60 yds. in length. Width is subject to specification at 1/4 to 27 inches.

▼ BREVITY—Identify by IEN - 11 if you write the maker ▼

FILE . . Round section tool can be bent to conform to a curve

Source: TEC IMPORTS
14402-6 Addison St., Van Nuys, Calif.

For metal, plastics, wood

Hard teeth are integral with a soft core in this new Abrafile. The core makes it possible to bend the file to a desired curvature to operate on interior surfaces and over concave or convex curves in areas normally hard to reach. Six sizes range by 32nds downward from the largest 1/4-in. diameter. Length of the largest unit is 6 1/4 inches. List price is 50 cents to 95 cents. A set of six lists at $4.25.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12 if you write the maker ▼

For Low Height Repair Work get a . . .

DUFF-NORTON "LO-HITE" JACK

Easily spotted in places inaccessible to other style jacks—the "Lo-Hite" will raise a 30-ton load up to 2". Pump is independent, and can be operated in an open area while jack is spotted in confined space under load.

Write for Bulletin AD-2G today.

THE DUFF-NORTON MANUFACTURING CO.
Main Plant and General Offices, PITTSBURGH 30, PA.—Canadian Plant: TORONTO 6, ONT.
"The House that Jacks Built"

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ANNOUNCING Atlas CLAUSING
12" LATHES—6300 SERIES

★ 1" Collet Capacity, 1 3/8" Bore
★ A.S.A.-L-00 Tapered Key Drive Spindle ★ Timken Bearings

CLAUSING — a name highly respected for years in thousands of plants — is now a division of Atlas. Atlas-Clausing will continue with the advanced features that have made the Clausing lathe's excellent reputation. Send for catalog and complete details.

ATLAS PRESS COMPANY
191 N. Pitcher St.
KALAMAZOO, MICHIGAN

▼ BREVITY—Identify by IEN - 14 if you write the maker ▼

Quick as a FLASH

Fire is fast...but you can beat it with quick-acting Kidde CO_2 Extinguisher. Point the horn...pull the trigger ...and flame-smothering CO_2 does the rest.
Write for free literature.

Walter Kidde & Company
136 Main Street, Belleville 9, N. J.

Kidde

▼ BREVITY—Identify by IEN - 15 if you write the maker ▼

ON DOMESTIC PRODUCTION ON DEFENSE PRODUCTION

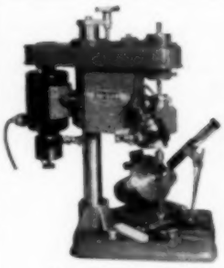
this Bulletin will help you *speed up* production

BULLETIN 20 gives full details about EASY-FLO and SIL-FOS, the low-temperature silver brazing alloys, and why and how they enable you to turn out strong, leakproof metal joints at amazing production rates and with push-button simplicity. It is also packed with useful information about joint designing and fast brazing methods.

WRITE FOR A COPY—TODAY

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
Agents in Principal Cities. In Canada: HANDY & HARMAN of Canada, Ltd., Toronto

▼ BREVITY—Identify by IEN - 16 If you write the maker ▼



Taylor

HI-EFF

PRECISION DRILLING MACHINES

Always Look for The PACTS THAT COUNT!

• Here are seven significant facts . . . They represent "HI-EFF" quality features for sensitive, precision drilling. Write for Bulletin 752.

1. Spindle and chuck run-out .0001".
2. Vaporized lubrication of bearings.
3. Spindle supported by 4 select, precision bearings—other moving parts precisely ground and lapped.
4. Solid column for maximum rigidity.
5. Variable speed—800 to 40,000 R.P.M.
6. Radial positioning of drill head.
7. Counter-balanced spindle affords sensitive, feather-touch feed.

Dynamometers • Static Balancers • Precision Drilling Machines

TAYLOR DYNAMOMETER & MACHINE CO.
528 N. WEST HIGHLAND AVE. • MILWAUKEE 3, WIS.

▼ BREVITY—Identify by IEN - 17 If you write the maker ▼

securityflex* saves money...

and because of its strength, toughness, and wear-resistant properties, this heavy-duty portable cord needs fewer replacements—lowers maintenance costs.

*Trademark

Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

the right cable for the job

ANACONDA® wire and cable

▼ BREVITY—Identify by IEN - 18 If you write the maker ▼

BROWNING

First Again!

BROWNING SHEAVES

with "UNBREAKABLE" MALLEABLE IRON

SPLIT TAPER BUSHINGS

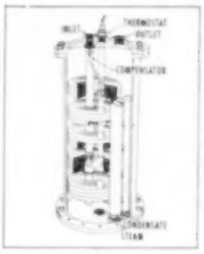
WRITE FOR THE NAME OF THE BROWNING DISTRIBUTOR NEAR YOU

BROWNING MANUFACTURING COMPANY
MAYSVILLE, KENTUCKY, U. S. A.

▼ BREVITY—Identify by IEN - 19 If you write the maker ▼

HEATING . . Hot water supply tank is heated by steam, 5 to 181 gallons

Source: AERCO CORP.
212-16 Lafayette Place, Englewood, N. J.



Ask for Bulletin 22

Fresh heat input starts immediately upon opening the outlet line from this new hot-water supply tank. There is no lag while water temperature lowers to a point where the thermostat will open the steam-inlet valve to the heating coils. The tank is able to supply hot water continuously within its rated capacity on a temperature drop of not more than 2 deg. F.

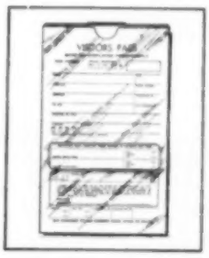
Control centers at a heat-sensitive bulb enclosed in a chamber within the housing. This chamber connects through a by-pass line to the cold-water inlet. Its top is open also to admit hot water from the stored supply. Opening the outlet line permits a portion of the cold water to flow into the chamber where it mixes with the hot water immediately reducing the temperature of the water passing over the bulb. This actuates the thermostat and opens the steam-inlet valve.

Smallest assembly in the line provides 5 sq. ft. of heating surface in a housing that holds 5 gal. of water. Overall dimensions are about 13 by 39 inches. The largest unit provides 300 sq. ft. of heating surface, holds 181 gal., measures about 30 by 135 in. overall including the mounting legs.

▼ BREVITY—Identify by IEN - 20 If you write the maker ▼

IDENTIFYING . . Visitor's pass to control his movement in a plant

Source: ALFRED ALLEN WATTS CO.
218 William St., New York 38, N. Y.



The Watts System

Three copies of a form are printed in distinctive colors, are interleaved with carbon paper and secured together at the top edge. They make up a new pass with which a visitor's movement can be controlled and timed after he is admitted to a plant. Each assembly of three carries a serial number and fits in a transparent plastic holder. It is equipped with a pocket clip so it can be carried in full view.

The form is made out at the point of entry with data covering the visitor, the purpose of his call, the material he may be carrying and his signature. His time of entry is marked. His copy is enclosed in the holder and he puts it on. The guard keeps the second copy. The third one is filed for the records.

The pass is signed by the interviewer through an open window in the plastic holder and the times of entry and leaving there are also recorded. When the visitor leaves the plant, the time out is marked. The visitor then gives it up. The pass measures 4¼ by 7¾ inches. It lists at $25.50 per thousand. The holder is $7.80 per dozen or $60 per hundred.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 21 If you write the maker ▼

SAFETY EQUIPMENT FOR ALL INDUSTRIES

IPCO M *and* M RAIL CLAMPS

For car stops, on loading platforms, temporary sidings, cars on grades, and traveling cranes . . . Used and recommended by leading Steel Companies, Manufacturing Plants, Mines, Grain Elevators, Cement Plants and Quarries.

WRITE FOR Bulletin F-12

IPCO *Safety Equipment for all Industries*

INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

▼ BREVITY—Identify by IEN - 22 If you write the maker ▼

LUBRICATION ECONOMY

LUBRIPLATE SAVES 7 TIMES ITS COST!

This remarkable saving was reported to us by the Wolverine Shoe & Tanning Corporation of Rockford, Michigan. Their unsolicited letter stated—"For every dollar we pay for LUBRIPLATE Lubricant No. 700 we save $7.00 in chain replacement". You, too, can enjoy the savings made possible with LUBRIPLATE Lubricants.

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

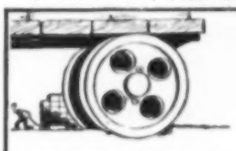
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N. J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

▼ BREVITY—Identify by IEN - 23 If you write the maker ▼



IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U.S. Pat. Off.

LONE STAR CEMENT CORPORATION

Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

▼ BREVITY—Identify by IEN - 24 If you write the maker ▼

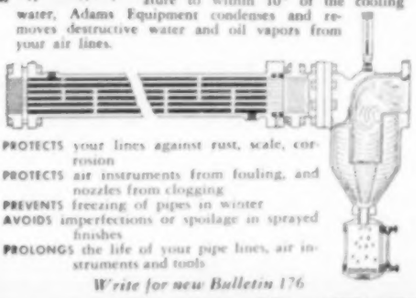
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator

with **ADAMS** Aftercooler and Cyclone Separator

• Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

BREVITY—identify by IEN - 25 if you write the maker

Every designer must be something of a metallurgist

Climax Molybdenum Company
500 Fifth Avenue · New York City

9 F 22

INDUSTRIAL EQUIPMENT NEWS

The Chemical IEN

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What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 20 JANUARY, 1952 No. 1

Working or Melting

Here's how you can start the year with a really good deed. It will help the other fellow. It will enable him to help you. It will pay its own way and return you a profit if you establish and operate it soundly.

Search your buildings and yards for everything you are not using. Catalog it under structures, storages, equipment, parts, tools, utilities, materials, supplies, finished products and any other heads suited to your particular operations.

Sort it to reactivate those idle portions that are usable immediately. You will find a surprising variety in equally surprising amounts. Mark to hold for review within the next six months an additional portion likely to be needed.

Divide the remainder into surplus of usable things for sale to others in short supply, and into scrap of all types for return to the mills. Set up lines of authority best suited to get immediate action and to keep the work active. Make your inventory. Then concentrate on scrap as the subject most critical right now.

Possibly you have been reading predictions by the experts of a cut in steel output unless the mills receive continuing big shipments of scrap throughout the winter. They are forecasting the crisis in February with scrap stocks at the mills, as of December, ranging down from less than a month to only four days. Let's look at some figures to measure this one materials problem.

The steel mills must depend upon you to collect and turn in about one ton of scrap for each four of steel produced. This means they must receive, from all sources outside of the mills themselves, a total of 6,000,000 ton of usable scrap each month of the year now starting, 240,000 ton each working day based on your 25-day month. That's a lot of scrap. It is added to an equal amount of scrap produced within the mills and to two ton of pig iron to make four of steel ingot.

Possibly you already have started the program in your own plant. If so perhaps we can help you find customers among IEN's readers for your usable surplus items. Just name them with their characteristics.

Perhaps you would like a copy of the free booklet by the Advertising Council on setting up a scrap salvage program. Let us know and we will see you receive one. We hope you will tell us of things you accomplish as you go along so we can tell others. Here are just a few—

A tobacco manufacturer reclaimed 10,000 feet of floor space representing a value of $50,000 by clearing out accumulated scrap equipment. The scrap amounted to 85 ton on the first sweep and that did not include many doubtful items.

A plastics molder found 20 ton of obsolete machinery in his production departments. A chemical manufacturer found 72 ton. A lumber company shipped three carloads of obsolete logging equipment, all according to an excellent article on the subject in the November issue of "Steelways".

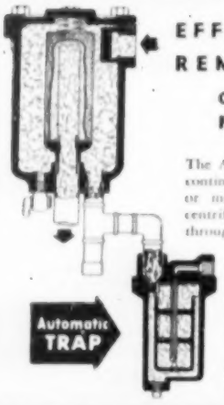
A stove maker cleaned out his templates and metal patterns of all stoves older than ten years. In addition to the tons of scrap returned to the mills he was able to tell his trade that he no longer could supply repair parts of old and obsolete stoves. In nearly every case the trade has purchased a new model.

Let's start 1952 with everything working or melting.

W. E. Irish

BREVITY—identify by IEN - 26 if you write the maker

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

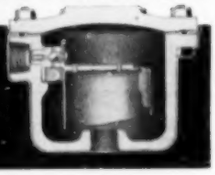
R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

BREVITY—identify by IEN - 27 if you write the maker

HOW TO GET RID OF CONDENSATE RAPIDLY

CRANE inverted open float steam traps



WORKING PRESSURES: 1 to 300 pounds saturated steam

You can increase your plant efficiency with Crane Inverted Open Float Steam Traps. They not only remove condensate as rapidly as it accumulates, but save many fuel dollars by recovering it for heating, hot water needs, or for return to boilers.

Discharge capacities are high, even though these traps are small and compact. Easy to install, Crane Steam Traps require only routine maintenance. Only major moving part is the float which actuates disc through a simple lever.

For more complete information, ask your Crane Man about them, or SEE YOUR No. 49 CRANE CATALOG.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

CRANE *Everything for Every Piping System*

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

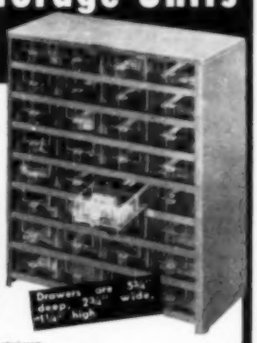
BREVITY—identify by IEN - 28 if you write the maker

LOW COST, ORGANIZED STORAGE SPACE

32-DRAWER (96 COMPARTMENTS) Metal Storage Units

CRYSTAL CLEAR OR MATCHING GRAY PLASTIC DRAWERS

MODEL J-32
$11.95
F.O.B. AKRON
15¾" high, 6" deep, 12½" wide



HUNDREDS OF USES:

Useful in every shop, lab, office, stockroom, store, home, assembly line . . . in office, TV, photographic and various work.

Orderly storage for small parts, bolts, nuts, drills, tools, carbide tips, buttons, thread, paper clips, labels, pins, rubber bands, clamps, fibre, photo supplies, negatives, fishing tackle, artist supplies, medical supplies, marine supplies, drugs, jewelry, etc. Safety catch ends accidental spilling, identity card drops into slot in drawer front.

Made in 6 sizes:

J-64	64 Drawers	192 compartments	$22.95
J-32	32 Drawers	96 compartments	11.95
J-24	24 Drawers	72 compartments	10.25
J-16	16 Drawers	48 compartments	7.75
J-12	12 Drawers	36 compartments	6.45
J-8	8 Drawers	24 compartments	4.50

SEND FOR FREE DESCRIPTIVE FOLDER

AKRO MILS, INC. P.O. BOX 989 AKRON 9, OHIO

BREVITY—identify by IEN - 29 if you write the maker

"Stop-Go" FLOW CONTROL FOR BINS, HOPPERS, TANKS, ETC.

with **TELLEVEL** Bin-Level Control

Mount a TELLEVEL near the top and another near the bottom of your storage bin . . . As the material-level falls or rises, the light pendant is pushed aside . . . Automatically *starts or stops* conveyor, elevator or pump . . . Can be furnished for bulk materials or liquids.

Rising Level of Material Tilts Float-Ball and Stops Conveyor

Write for TELLEVEL Bulletin No. 1048.

STEPHENS-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · Car Pullers · Winches · Saco Speed Reducers · SealMaster Ball Bearings

231 RIDGEWAY AVE., AURORA, ILLINOIS

BREVITY—identify by IEN - 30 if you write the maker

Electrical breakaway coupling disconnects *automatically*

Unattended, this new coupling disconnects when a predetermined pull is applied (10 to 40 lbs. spring tension). Couples or uncouples, without a wrench. Moisture proofed and pressurized to 750 lbs. psi.

Wherever lines carrying steam, water, air, oil or electricity require instant separation, WIGGINS quick disconnect couplings are giving superior performance.

INST-O-MATIC COUPLINGS

We engineer to meet your requirements. Submit your problem.

Exclusive Distributor
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TETERBORO—216-222 Union St., Hackensack, N. J.
CHICAGO—5315 West 63rd Street
DALLAS—3214 Love Field Drive
GLENDALE—1231 Air Way
MIAMI—P.O. Box 141, Int'l Airport

Manufactured by
Wiggins
E. B. WIGGINS OIL TOOL CO., Inc.
3424 E. Olympic Blvd., Los Angeles 23, Calif.

BREVITY—Identify by IEN - 31 if you write the maker

new design...
Adds 50% to safe maximum speeds of

LOVEJOY FLEXIBLE COUPLINGS

With the collar held in place by a special multiple leaf spring, this new Lovejoy Flexible Coupling handles speed increases up to 50%—with complete safety! Instantly adjusts for misalignment, vibration, surge or backlash. No wear on metal jaws — no tear-downs to change cushions — no lubrication ever needed! Lovejoy Couplings are for services from 1/6 to 2,500 H.P.

Write for catalog with handy selector charts

LOVEJOY FLEXIBLE COUPLING CO.
5014 W. LAKE ST. • CHICAGO 44, ILLINOIS
Also Manufacturers of Lovejoy Universal Joints and Lovejoy Variable Speed Transmissions

BREVITY—Identify by IEN - 32 if you write the maker

SEALMASTER BALL BEARING UNITS

3 Points of *Superiority*

1 **PERMANENTLY SEALED**—Felt-lined steel flinger rotating in labyrinth keeps out dirt and keeps in proper amount of lubricant.
2 **SELF-ALIGNING**—Bearing unit, with seals independent of housing, can align itself in any direction without seal distortion.
3 **PRE-LUBRICATED**—Proper amount of grease is put in bearing chamber before it leaves the factory.

- Flange Units
- Pillow Blocks
- Take-Up Units
- Cartridge Units
- Hanger Units

Write for catalog 845

BEARING DIVISION
STEPHENS-ADAMSON MFG. CO.
Tellevel—Bin Level Controls · Car Loaders · Car Pullers · Winches · Variable Speed Reducers · Saco Speed Reducers · SealMaster Ball Bearings
231 RIDGEWAY AVE., AURORA, ILL.

BREVITY—Identify by IEN - 33 if you write the maker

SAVE UP TO 85% ON TOOLS—MACHINERY AND PARTS!!
NEW! 200 PAGE CATALOG

WAR SURPLUS SAVINGS

STATIONARY or PORTABLE D.C. ARC WELDER
For light or heavy industrial work. Delivers 300 Amps. continuous or 350 to 400 Amps. intermittent. Designed to weld continuously for hours. This unit is built-around rugged, heavy duty aircraft type generator and comes complete with Pulley reactor, output controls, On-Off switches & rheostat mounted on sturdy steel frame. Operates on 15 H.P. for maximum output. Gas or electric motor. 97.50

JUST OFF THE PRESSES! IMMEDIATE DELIVERY! ORDER NOW !!
Our latest and biggest CATALOG of NEW and SURPLUS BARGAINS. Thousands of items at UNHEARD OF LOW PRICES! SAVINGS UP TO 85% on Hand & Power Tools, Electrical Supplies, Industrial Machinery, Gas and Electric Motors, Winches, Hoists, Machine Tools, Gauges, Welding Equipment, Pneumatic & Air Tools, Raw Stocks, Aluminum, Brass, Copper & Steel in Sheets, Bar, Rods, Tube & Extrusions, Nuts, Bolts, Rivets, Screws, Wire, Cable and a Huge Stock of HYDRAULIC SUPPLIES including Cylinders, Valves, Pumps, Motors, Fittings, Tubing, etc. While these items last we will continue to sell them at typical low Pulley Prices. Write for your copy of "1952 Bargain Packed Catalog TODAY!

PULLEY SPECIALS on HYDRAULIC PUMPS & CYLINDERS

HYDRAULIC PUMP or MOTOR CENTER TYPE
Lagin Center type. For operating hydraulic systems, presses, motors, etc. Delivers 8 GPM at 1200 RPM at 1000 PSI with 3 HP. Can also be used as Hydraulic fluid motor. 3 3/8" stand pipe ports, 1" splined shaft for pulley or direct attachment. 5 1/2" dia., 7" long. Used but condition guaranteed. 19.50

Special! HYDRAULIC CYLINDER
Gives 20,000 lb. thrust (push or pull) using 1500 PSI line pressure to operate from our hydraulic pumps. With pressure up to 40,000 lb. thrust with 3000 PSI. Can also be used on low pressure air systems. 4" bore, 18" stroke, 30½" length. Ideal for roof-turn-a-plug applications. 29.95

P-1 STRATO POWER PUMP
With built-in variable flow control valve in head. Positive displacement piston type. Displacement capacity 2 gals. per min. at 1500 RPM or 1250 PSI. Pressure limit 1250 PSI continuous, 1400 PSI for 15 sec. Operates at 3750 RPM, intermittent use, 4500 RPM. Rotates either direction without adjustment. 19.50

No. 3 HYDRAULIC CYLINDER
Double acting. Bore is 1" — Shaft ½". Has stroke of 2½" to 4". Stroke can be adjusted with internal stroke stops. Overall length is 8½". Will take 1500 lbs. intermittent duty. 3000 lbs. intermittent lift or push up to 1100 lbs. 5.75

P-4 VICKERS ANGLE PUMP
Positive displacement type, single piston. Displaces .320 cu. in. per revolution. Max. capacity of 8 gals. per min. at 3000 RPM or 1500 PSI, continuous. 1875 for 15 sec. Operating speed of 3750 RPM, intermittent maximum, 4500 RPM. Rotates to the right only. 19.95

4 WAY VALVE
Piston type. Pressure balanced, OK in neutral position. Piston type with built-in relief valves for back of cylinder strokes. 5/8" AN tube size (1 5/8" dia. overall, mint & perfect. Parts to cylinder are 1/2" AN tube size (1 1/4" dia. overall). 9.75

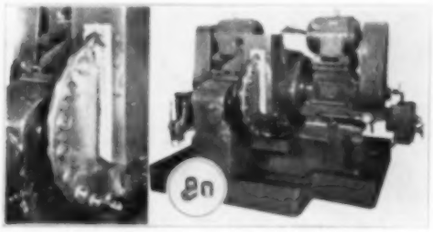
PALLEY SUPPLY CO.
DEPT. IN-2
6321 SAN FERNANDO RD.
GLENDALE 1, CALIF.

Order from this ad. All sales final. All prices F.O.B., Glendale, Pay by M.O. or check. P.O.'s accepted from D.S.R. firms. C.O.D.'s deposit with C.O.D.'s.

BREVITY—Identify by IEN - 34 if you write the maker

GRINDING . . Opposed disc machine finishes ends of bearing rollers

Source: GARDNER MACHINE CO.
51 State Line Road, Beloit, Wis.



Operator loads and machine ejects

Bearing rollers are positioned by hand in openings in a work disc on this new No. 125 26-in. double-spindle grinding machine. The disc is driven at variable speed between micrometer-positioned guides that center the work pieces as they enter and leave between opposed abrasive discs. Unloading is by a mechanical ejector.

Two passes are made through the machine, each at the rate of 18 pieces per min., for stock removal of 0.006 to 0.008 in. in overall roller length. Tolerances are held to 0.001 in. for parallelism, 0.002 for squareness and uniformity.

The disc spindles are mounted in anti-friction bearings in heads that can be pivoted for best grinding action. The heads ride on dovetail slides on the base. Each mounts its own belt-connected motor. Motor-driven equipment circulates coolant from a sump surrounding the machine base.

The work disc is interchangeable to grind a range of roller sizes, in addition to the 1¾ by 1⅝-in. units in the illustrated set-up. A removable guard surrounds the disc and work. Strip brushes retain the coolant spray.

BREVITY—Identify by IEN - 35 if you write the maker

PROTECTING . . Dynel fabric shirts, trousers, coveralls for chemical workers

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

Need not be pressed

ChemKlos trade names a new line of worker clothing made of Dynel fabric to resist attack by acids, caustics, mildew, moths, and to prevent shrinkage in washing. As shown in the illustration, a shirt made of the material was still in good condition after five months wear and many washings. A cotton shirt in the same service was ruined after one week's wear and one washing. All three types of garments are available in sizes to fit most workers and are listed in a four page Bulletin CF-28.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 36 if you write the maker

TROMBETTA SOLENOID CO.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.

SB-373 SHOE BRAKE
10" WHEEL, 5" FACE, 450 FT.-LBS.

SB-300 LINE OF BRAKES
TORQUE 3 TO 16500 FT.-LBS.

B-100 LINE OF DISK BRAKES
TORQUE 10 TO 25000 FT.-LBS.

EIGHT LINES OF SOLENOIDS
RECIPROMOTORS AND SEMOTORS

BREVITY—Identify by IEN - 37 if you write the maker

THE EASY AND ECONOMICAL SOLUTION TO HEATING GASES AND PROCESS AIR

CHROMALOX *Electric* HEATERS

WANT MORE KNOW-HOW?
Get Catalog 50 B's filled with useful heating data.
IB-16

For Accurate Temperatures Up to 1000° F Maintained by Thermostat with Manual or Automatic Control

Nichrome is reliable, immediate and continuous heat for drying, curing and baking ovens that give you the temperatures you need. Easily installed in round or rectangular ducts for heating air and gases under forced circulation. Parallel fin design dissipates maximum heat with minimum turbulence of air stream. Moisture proof types available.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.
See Chromalox *Radiant Heaters Advertisement*, Page 11

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 38 if you write the maker

BRADY QUIK-LABEL PIPE MARKERS

FAST... POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors — no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy. Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

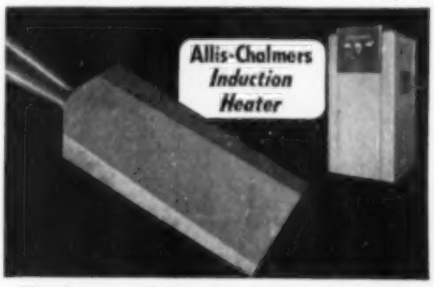
Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF STICKING PRODUCTS
W. H. BRADY COMPANY
1661 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 39 if you write the maker



Hardens and Draws 4 Chisels for 1c
Rate: 1 every 10 seconds

YOU CAN ENJOY low costs like these in your shop by using versatile Allis-Chalmers Induction Heaters. The same heater can braze, solder, anneal, case, and through harden by simply changing the work coil.

Work coils are easy to install. When coils are changed, there's no need for additional output transformers (needed on most units), which require special shielding and skilled help to install.

Low cost plus versatility makes the unit a welcome addition in many job shops. Call your nearby Allis-Chalmers Sales Office and find out what Induction Heat — the A-C way — can do to your production costs, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-5243

ALLIS-CHALMERS

BREVITY—Identify by IEN - 40 If you write the maker

METZGAR
GRAVITY
WHEEL & ROLLER
CONVEYORS

Saves up to 70% time in loading, unloading, warehouse handling and production line flow of work at no cost for power. Portable or permanent installation. Lubricated for life. Ball Bearing throughout.

GRAVITY POWER Costs Nothing

Standard 11½", 15", 18" widths . . . 5', 10' lengths. Curves 5', 8', 12', or to order. Strong ribbed rails.
Ask for Folder No. 1201

METZGAR CO.
METZGAR
MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES • REEL DOLLIES & END-WOOD WHEELS.
417 Douglas, N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 41 If you write the maker

MORE PRODUCTION..SAME SPACE

A well-known metal partition manufacturer faced the problem of increasing production without enlarging building. New and better handling methods were obviously needed. They chose an American MonoRail overhead handling system as the best answer to increase capacity without increasing space and with less handling labor. Now, this American MonoRail system handles the steel components from receipt of raw materials, through finishing to shipping. The system boosted production, cut handling labor, improved space utilization, reduced material damage, bettered working conditions, and improved production control.

Let an American MonoRail engineer show you how it can be done in your plant.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 42 If you write the maker

To MACHINE STAINLESS STEEL AT Less Cost

Ask your nearby Carpenter representative for a copy of the new "NOTEBOOK on Machining Stainless Steel." This 116-page book contains much information published for the first time in chapters on:

- TURNING
- DRILLING
- TAPPING
- THREADING
- MILLING
- BROACHING
- REAMING
- FILING & SAWING
- STONING
- LUBRICATION

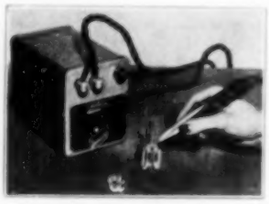
A Check Chart in each section helps you quickly spot troubles and correct them. Call your Carpenter representative for a personal copy of the NOTEBOOK. He will be glad to give copies of the NOTEBOOK to Production and Management Executives. And after you have it, if you want additional copies for the men in your plant, they can be secured at cost. Extra copies are available at 50c apiece to cover cost of printing and mailing.

THE CARPENTER STEEL COMPANY
151 W. Bern St., Reading, Pa.

BREVITY—Identify by IEN - 43 If you write the maker

SOLDERING . . Tweezer type tool and transformer for small assemblies

Source: CONTACT INC.
236-40 Main St., Dept. 401, Cambridge 42, Mass.



Single assembly $49.50

Hotip Model H-101 is a new assembly of five-step transformer and tweezer-type tool. It heats work to soldering temperature when it is gripped between the tweezer tips and the input circuit is closed through a foot or knee-operated switch. The tweezer is equipped with an extension cord for connection to the transformer housing. The transformer also has an extension cord and plug for operation from a 110-volt ac. line. Output is 4 volts at 15 amperes. A selector knob on the front of the transformer housing permits heat selection for wire gages between No. 52 and No. 16. The tool will solder two No. 16 pretinned wires or their equivalent.

BREVITY—Identify by IEN - 44 If you write the maker

PLASTIC . . Glass reinforced sheet and rod for product manufacture

Source: DYNAKON CORP.
5507-11 Hough Ave., Cleveland 3, Ohio

Technical data upon request

Three grades A3A, G1A and E1B, are included in the company's new line of molded glass-reinforced sheet. Thicknesses range from 1/8 to ½ inch. Largest size at present is 18 by 28 inches. The line includes rod ranging from ¼ to 1 in. in diameter in ground and unground finish. Length is 48 inches. Both the sheet and rod are made by molding the reinforcing glass fiber after impregnation with thermosetting resins.

Characteristics include machinability, high strength, resistance to passage of electric current and ability to stand up in contact with acids, salts, mild alkalies, organic solvents. One form is available in various colors for decorative applications. All for service in temperatures below 300 deg. F.

BREVITY—Identify by IEN - 45 If you write the maker

FASTENING . . Cord and twine made in a paper twisting process

Source: PLYMOUTH CORDAGE CO.
51 Court St., Plymouth, Mass.

PlymKraft trade names a new line of twisted paper cord and twine for a variety of uses. Included are tissue cords, paper-wrapped glass twine, chair-seat cord, wool twine, weatherstripping, welting cord, seaming cord, cheese twine, cable filler. Production is in a new division the company has set up to supplement its cordage lines.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 46 If you write the maker

A PAID NEWS ADVERTISEMENT BY THE ALVEY-FERGUSON CO.

CONVEYING . . 90° power roller curve for handling around curves

overcomes all past difficulties

A new, 90° Power Roller Curve Conveyor — which overcomes all past difficulties in conveying boxes, cartons and packages around curves — has just been perfected by The Alvey-Ferguson Co.

The basic differences in the design of this conveyor are: the use of tapered rollers which provide efficient package control with no skewing or jamming action—and a simple V-belt drive which assures quiet, smooth operation with extremely low maintenance cost. This V-belt drive requires no oiling and it can be readily removed without the use of special tools and without dismantling the conveyor.

Power for driving the V-belt is provided from an individual motor or from an adjacent conveyor. This new Tapered Roller Curve Conveyor is so constructed as to be combined easily with other A-F Conveyor Sections.

For latest information on modern, efficient handling methods for all types of products and materials, write

THE ALVEY-FERGUSON CO.
339 Disney St., Cincinnati 9, Ohio

BREVITY—Identify by IEN - 47 If you write the maker

"it's easy to bend"

a new practical 32 Page
BENDING MANUAL
by the originators of "Die-less Duplicating"

This instructive and authoritative booklet will quickly prove itself indispensable wherever bending is done or is needed. It brings you a veritable gold mine of tested, authentic bending methods applicable to any rotary type bender. The proper bending technique may frequently offer a new approach to an old problem by simplifying product design and cutting production costs.

The exact methods of producing various types of bends in a wide range of materials are illustrated, step by step, with over 90 diagrams and charts together with valuable tooling suggestions.

You'll want a copy . . . Mail your request today.

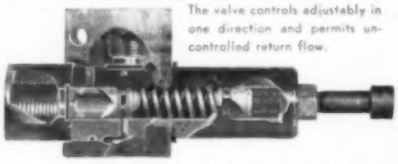
O'NEIL-IRWIN
318 8th Ave. Lake City, Minn.

NOTCHERS PUNCHES BENDERS BRAKES ROLLERS SHEARS ROD PARTERS

BREVITY—Identify by IEN - 48 If you write the maker

An Adjustable
FLOW REGULATOR

This newly perfected adjustable Flow Regulator holds at a constant rate even though the pressure fluctuates.



The valve controls adjustably in one direction and permits uncontrolled return flow.

The spring back piston in the housing is mounted in front of the adjustable screw. It carries a calibrated orifice; operates axially on change in inlet pressure so as to increase the throttling action.

Four sizes, ¼, ⅜, ½, and ¾ inch. Overall length 4½ to 7½ inches. Adjustable over a 50% flow range. Maximum pressure is 3000 pounds.

Write for illustrated circular.

West Coast: H. E. Webb
918 North Kenilworth Avenue • Glendale, California

WATERMAN ENGINEERING Company
725 CUSTER AVENUE
EVANSTON, ILLINOIS

BREVITY—Identify by IEN - 49 If you write the maker

A Better STRAINER

- *BODY*—is cadmium-plated for protection against corrosion.
- *SCREEN*—High-grade woven monel wire basket.
- *SCREENCAP*—Easily removed. Machined face and spark-plug-type gasket provide tight joint. Cap and screen come out together. Screen automatically aligns when replaced.
- *SIX SIZES*, ½" to 2", for pressures up to 600 lbs. Reasonably priced.

- Many Thousands in Service
- Sold by nearly 150 Mill Supply Houses

See Your Supply House or Send for Bulletin S-201

YARNALL-WARING COMPANY
122 Mermaid Ave., Philadelphia 18, Pa.

YARWAY STRAINERS

BREVITY—Identify by IEN - 50 if you write the maker

Speed spotting of cars for loading and unloading . . . reduce switching and demurrage costs to a minimum. One man with two or three turns of rope around the motor-driven capstan controls movement of up to six railroad cars. Stationary or portable. Integral or separate 5 or 10 hp motors develop 5,000 and 10,000 lb. rope pull.

Link-Belt offers a complete line of car spotters . . . also specializes in drum type puller applications.

WRITE TODAY
For 16 Page Bulletin 1992-A

LINK-BELT COMPANY:
Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in Principal cities.

BREVITY—Identify by IEN - 51 if you write the maker

MEET THE NEW MODEL

MUCKLE VENTS

Take a look at the new silhouette . . . it's low slung and streamlined —better looking on any roof!

Get away from old, "eye sore" ventilators—get the newly designed Muckle Vents. Engineered for better performance in moisture laden air—the motor is out of line of air flow. A compact, good looking, easy to install all-in-one unit to fit any roof.

Write today for more information on Muckle Vents

Muckle MANUFACTURING CO.
OWATONNA 33, MINN.

BREVITY—Identify by IEN - 52 if you write the maker

WANT MORE EFFICIENT— LONGER LASTING STEEL STAMPS?

USE "SAFETY" WEDGE GRIP LETTERS and FIGURES

- No Spall
- No Mushroom
- More Service
- Knurled Grip
- Patented under No. 2,085,794
- Thumb Side Markings

Knurled sides for positive grip—patented design provides perfect balance and deeper impressions. Especially recommended for toughest jobs on steel castings, cylinders, tool steel, etc. All sizes available 1/8" to 1" characters.

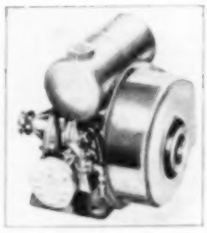
Write for Bulletin LF-50.

M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS
99 East Carson Street • Pittsburgh 19, Pa.

BREVITY—Identify by IEN - 53 if you write the maker

ENGINE . . Two-cycle gasoline has 1.5 hp. rating at 3,600 rpm.

Source: WEST BEND ALUMINUM CO.
51 West St., West Bend, Wis.



For appliance drive

Model 2751 in horizontal assembly as shown in the illustration and Model 2701 for vertical assembly are new single-cylinder air-cooled two-cycle gasoline engines. Overall dimensions in horizontal arrangement are about 11 by 15 by 13 inches. Weight is about 15 pounds. Equipment includes a Wico high-tension flywheel-type magneto, Tillotson float-feed bowl-type carburetor, governor and fixed spark, fuel filter and a fuel tank holding ½ gallon. The valve is made of beryllium copper. Spark plugs have standard 14-mm. threads.

A centrifugal blower mounted in the flywheel draws cooling air over the cylinder fins. Lubrication is by oil-gas fuel mixture employing ½ pt. of oil mixed with each gallon of gasoline. An air cleaner, the mounting bracket and a blower-housing screen are available to specification. The cylinder and crankcase are of aluminum, the cylinder carrying a cast-in cast-iron sleeve. The connecting rod also is aluminum with cast-in oil-impregnated bronze bearings. The main bearings are also oil-impregnated bronze. The crankshaft is forged steel hardened, ground and Superfinished.

BREVITY—Identify by IEN - 54 if you write the maker

GALVANOMETER . . Moving coil unit, mechanism only or complete assemblies

Source: SHALLCROSS MFG. CO.
8-12 Jackson Ave., Collingdale, Pa.

For precise circuit balance

Type 1951 is a new moving-coil galvanometer mechanism connecting to a pointer that rides over a scale to 15 divisions on either side of a central zero point. The suspended portion of the mechanism is enclosed in a cylindrical aluminum housing for vertical installation to position the scale horizontally. The housing will fit into a ¾-in. opening.

A knurled knob on top of the case permits zero adjustment for the pointer. The knob can be locked and is equipped with a slide lock to protect the movement from mechanical shock in handling. Each mechanism is supplied with its magnet, and the necessary parts for assembly in new instruments or to replace existing galvanometers in bridges or potentiometers in which latter case the magnets and other parts can be omitted.

Four sensitivities are included in the line ranging between 0.5 and 4 microamperes per mm. scale division. Corresponding coil resistance is 1,000 to 20 ohms. External critical damping resistance is 2,400 to 50 ohms. A complete assembly with a rectangular housing is available in a Series 315. Dimensions are 4⅞ by 3⅝ by about 4½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 55 if you write the maker

"The area of greatest waste," according to authorities, "is in materials handling" . . . a powerful recommendation for Logan Conveyors. Perhaps you, too, can cut handling costs with Logan Conveyors to (a) keep equipment operating at capacity with a minimum of manual effort (b) deliver material to operators at convenient working height (c) save time and effort between processes. Write for literature.

Logan Conveyors
LOGAN CO., 200 CABEL ST., LOUISVILLE, KY.

BREVITY—Identify by IEN - 56 if you write the maker

PICK THERMOCOUPLES FROM TABLES!

If you use thermocouples or thermocouple-making materials, you can have a free copy of the handy, practical LAN Catalog NS2. It has, on Page 4, a table showing which kind of thermocouple you should pick for each of the commoner furnace temperatures. And, on Pages 8 and 9, you'll find another table, giving the best materials for tubes to protect thermocouples in sulfur, salt, and various other furnace gases and liquids which corrode the ordinary iron tubes. You'll find thermocouple specifications, wire specs, insulators and beads, and all other parts, in this book. Write for Catalog NS2.

LEEDS & NORTHRUP COMPANY, 4901 STENTON AVE., PHILA. 44, PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT TREATING FURNACES
Jrl. Ad N-33A(13)

BREVITY—Identify by IEN - 57 if you write the maker

SLASH CLEANING and COOLING COSTS with REX FLAT SPRAY NOZZLES

• The hard-hitting flat sheets of water from Rex Flat Spray Nozzles do a top-notch job of cleaning or cooling a wide range of products—and at practically no cost.

Of simple, one-piece construction, they require no adjustment . . . assure a flat, uniform spray of maximum impact force. The only operating cost is for water, and consumption is very low.

Send for our descriptive booklet, using coupon below.

REX FLAT SPRAY NOZZLES

Chain Belt Company
1675 W. Bruce Street, Milwaukee 4, Wis. 90-211
Please send me a copy of Bulletin 50-58
Name.....
Company..... Dept.....
Address.....
City..... State.....

BREVITY—Identify by IEN - 58 if you write the maker

5 built-in advantages found only in . . . BLAW-KNOX *Electroforged* STEEL GRATING

BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY
2050 Farmers Bank Bldg.,
Pittsburgh 22, Pa.
Offices in Principal Cities

1. Rigid one-piece construction—easy to install.
2. Maximum open area for light and air.
3. Easy to paint—all surfaces accessible.
4. Non-slip Twisted Cross-Bar.
5. Self-cleaning—no sharp corners to clog.

Blaw-Knox Grating Has Them All!

WRITE FOR BULLETIN 2365

BREVITY—Identify by IEN - 59 if you write the maker

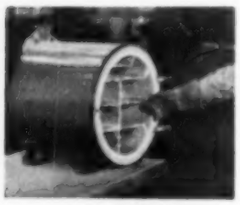
BREVITY—Identify by IEN - 60 if you write the maker

BREVITY—Identify by IEN - 61 if you write the maker

BREVITY—Identify by IEN - 62 if you write the maker

HEATING . . Electric cabinet stores low-hydrogen welding electrodes

Source: PHILIP RODEN CO.
1721-A E. Lake Bluff Blvd., Milwaukee 11, Wis.



Lists at $210

Coated electrodes employed in low-hydrogen welding are stored in this new Model-300 DryRod electrode oven after they have been removed from their moisture-proof shipping containers and prior to their use in the arc-welding operation. The cabinet is electrically heated in a range between 175 and 325 deg. F. for storage purposes. The temperature can be raised to 550 deg. F. to rebake and dry out coated electrodes that have been exposed in a humid atmosphere. The cabinet will take 350 lb. of 18-in. electrodes. Its overall dimensions are 22 in. in outside diameter by 27½ in. in length. Weight is 102 pounds.

The storage area inside the insulated cylindrical housing is divided into compartments adjustable for size. Heat is supplied by an 840-watt electric element for operation on 110 to 220-volt input. Adjustable thermostat is provided.

BREVITY—Identify by IEN - 63 if you write the maker

CLEANING . . Liquid material also cleans, deodorizes floors, woodwork

Source: WEST DISINFECTING CO.
42-18 West St., Long Island City 1, N. Y.

One cup to a gallon of water

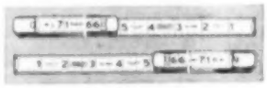
Pine Lustreclean is a new liquid for dilution in water to apply on wood, tile, linoleum, cork, painted or varnished floors, walls, woodwork. Application is by mop or scrubbing machine. No rinsing is required. It dries to a satin finish.

The material is non-abrasive and non-inflammable. It will remove rubber burns, marks left by composition heels and soles. It will also remove old encrusted wax coatings. It is not intended to deposit as heavy a wax coating as conventional water-base waxes.

BREVITY—Identify by IEN - 64 if you write the maker

GAGE . . Hinged wood rule reads to both right and left

Source: STANLEY TOOLS
478-82 Myrtle St., New Britain, Conn.



Trade named Read-Rite

Graduations and figures on this new 6-ft. rule, Zig-Zag Type No. 150F, read left to right on one face and right to left on the other. The rule can be rolled over to read in either direction. It need not be turned end for end. Construction employs nickel-steel joints with ball-socket action, graduations protected by plastic finish, red branding, green ends.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 65 if you write the maker

BREVITY—Identify by IEN - 66 if you write the maker

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: 2-ounce size, 2 x 4 x 6"

Your enquiries are invited.

DAYTON ROGERS
Manufacturing Company
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 67 if you write the maker

THERMO-MAT radiates live penetrating heat from floor to knees! Insures foot and leg comfort wherever you stand or sit—in cabs, booths, at desks, check stands, counters and countless other locations! Melts ice and snow on doorsteps, etc. Safe and effective even on damp concrete. Economical—operates for a few cents per day. Reversible, long-lived neoprene rubber compound cover, lasts for years. Measures 14" x 22". Plugs into any 110-220 Volt electrical outlet. Maintains uniform temperature. Order by mail today! State type of floor; outdoors, indoors, heated or unheated location. $11.95 delivered! Thoroughly tested. Thousands used. Performance guaranteed! Free Folder!

THERMO-MAT CO.
814-1 South Robertson Blvd., Los Angeles 35, Calif.

BREVITY—Identify by IEN - 68 if you write the maker

▼ BREVITY—Identify by IEN - 69 If you write the maker ▼

THIS P-K SCREW SAVES UP TO 50% IN ASSEMBLY WORK-HOURS

cuts thread as it's turned in

AVOIDS

Tapping
Bolting
Riveting
Inserts in Plastics

ADDS

Fastening Strength

SAVES

Time and Trouble in Millions of Applications

P-K TYPE F
Hardened SELF-TAPPING SCREW
One of six major types for every metal and plastic assembly. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

Call in a P-K Assembly Engineer
See why industry's fastening-wise leaders say —
YOU'RE O.K. WITH P-K® — THE ORIGINAL
PARKER-KALON SELF-TAPPING SCREWS

AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

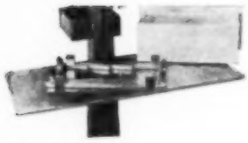
▼ BREVITY—Identify by IEN - 70 If you write the maker ▼

ADD "Jet Plane Speed"
To Your ASSEMBLY JOBS
With These Versatile
DETROIT POWER SCREWDRIVERS

Banish slow, dragging hand methods that eat into your profits. Drive screws with almost incredible speed by using Detroit Power Screwdrivers, the outstanding hopper-fed machines that pay for themselves quickly, then pay big dividends in stepped-up production and lower labor costs—they drive screws as fast as one a second, doing a perfect job without damage to heads or threads . . . all types of screws . . . driven to uniform tension. So, if your assemblies are fastened with screws, take off now to record-breaking assembly speed by adopting Detroit Power Screwdrivers. Let them prove their indispensability in your plant.

3 SIZES
to drive screws from No. 2 to ¼". Model A pictured. Capacity No. 2 to No. 6 screws.

Vertical type, manually operated fixture assembling screws around outer periphery of cylindrical die casting.



Driving twenty screws in cabinet side shields in 57 seconds.

Send for further details, also information about D.P.S. Motorized Hopper Units, Nut Drivers and Special Assembling Machines.

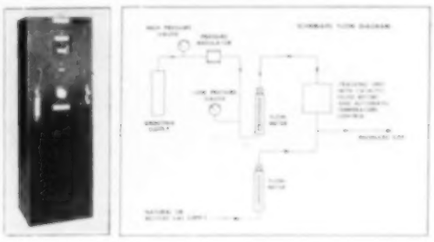
Avail yourself of our up-to-date laboratory equipped to solve the "impossible."

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICH.

▼ BREVITY—Identify by IEN - 72 If you write the maker ▼

HEAT TREATING . . Gas generator produces protective furnace atmosphere

Source: HEVI-DUTY ELECTRIC CO.
4210-14 W. Highland Blvd., Milwaukee 1, Wis.



Promotes good tool making

Rating is 150 cfh. of atmosphere gas produced by cracking ammonia in this new Type M-5724-S unit in the company's Atmo-Gen equipment. Its steel housing encloses an electric tube-type furnace with temperature control, a catalyst-filled alloy retort and the required piping, flow-control and metering equipment.

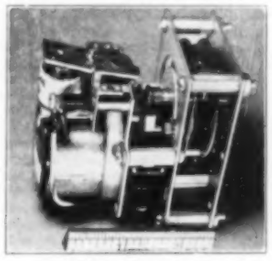
Ammonia gas from a pressure bottle is metered to the heated catalyst-filled retort for production of nitrogen and hydrogen to deliver to a heat-treating furnace. Connections are provided with a flow meter to add bottled or natural gas to control the carbon potential of the produced gas.

Operating temperature is 1,850 deg. F. Electric input is 5 kw. from a 220-volt 60-cycle ac. line. Overall dimensions are 24 by 15 by 72 inches.

▼ BREVITY—Identify by IEN - 73 If you write the maker ▼

TIMING . . Adjustable delay relay includes adjustable time delay reset

Source: A. W. HAYDON CO.
230-34 N. Elm St., Dept. 2, Waterbury 20, Conn.



Double delay device

New reset controlled by an escapement has been added to the company's basic Series-6400 dc. and Series-11400 ac. time-delay relays. The new design adds ⅝ in. to the length of the standard time-delay assembly, previously described IEN-10070-50. It is particularly suited to protect electronic tubes by assuring a delay interval prior to feeding high voltage to a plate circuit until the cathodes in the tube have reached proper temperature. The unit also protects in the event of power interruption by opening the circuit.

Typical application is in a radar installation in which a 15-min. delay is provided prior to closure of the load circuit and in which the time required for the unit to reset is 7 min. or a length in proportion to the length of current interruption. The assembly is available in a standard dust cover or in a hermetically sealed enclosure.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 74 If you write the maker ▼

RUEMELIN BLAST GENERATORS

A practical low-cost sand blast used by plant engineers for maintenance work. Cleans rust, paint, scale from piping, valves, fittings, renovating buildings, stripping paint from trucks, busses, trailers, railroad cars, structural steel, storage tanks, ship hulls, etc. Can be fitted with Wet Adapting Nozzle for eliminating dust.

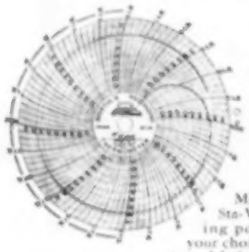
Write for Bulletin 16-C

RUEMELIN MFG. CO.
3863 N. Palmer St.
Milwaukee 12, Wis.

Manufacturers and Engineers
SAND BLAST AND DUST COLLECTING EQUIPMENT, WELDING FUME COLLECTORS

▼ BREVITY—Identify by IEN - 75 If you write the maker ▼

How's THIS . . . for control of compound melting temperatures?



Temperature variation only 1° F. + or − around the clock with Sta-Warm bi-metallic fixed thermostats on your compound heating pots.

Many styles and sizes of Sta-Warm compound melting pots are available for your choice. Each is laboratory tested before shipment to guarantee you will receive a unit that holds to the temperature tolerance you require on your job. The 24-hour record chart shown above is typical of the uniformity you can expect to be built into the Sta-Warm pre-set thermostat melter you order. (Variable thermostat heaters also readily available.)

Inquire today for catalog literature. State your hourly output requirement and application for complete reply by return mail.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

▼ BREVITY—Identify by IEN - 76 If you write the maker ▼

ALLIS-CHALMERS Totally-Enclosed Fan-Cooled MOTOR

Get the Motor that Cleans Itself

MOTOR CLEANING operations are reduced . . . maintenance costs are lower than ever before with the new Allis-Chalmers tefc motor. Here's why! Concealed air passages have been eliminated; dirt cannot build up to cause overheating. Cooling air is blown over the ribbed cast iron frame and bearing housings — carrying dirt away with it. Only dirt that sticks can be wiped or blown off.

This new motor built in all NEMA standard frame sizes from 224 to 505. Also in explosion-proof type. Get Bulletin 51B6144 from your A-C Authorized Distributor or District Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3463

ALLIS-CHALMERS

▼ BREVITY—Identify by IEN - 77 If you write the maker ▼

NEED A HAMMER?
Switch to BLACK & DECKER Power!

Black & Decker Electric Hammers — 4 models; ½" to 2" capacity in concrete.

BLACK & DECKER ELECTRIC HAMMERS pack plenty of punch for high-speed drilling and channeling in concrete, stone or brick; doing light demolition; removing rust and scale from metal; driving spikes; scuffing concrete surfaces. Deliver thousands of hammer blows per minute. Light weight, husky, completely self-contained, no transformers needed. See your nearby B&D Distributor. Write for free catalog to: THE BLACK & DECKER MFG. CO., 615 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL
Black & Decker
PORTABLE ELECTRIC TOOLS

BREVITY—Identify by IEN - 78 if you write the maker

IT'S POWERFUL

IT'S SELF-CONTAINED

A really SELF-CONTAINED tool—requiring no air compressor or battery for operation — that will save you . . . MONEY and TIME

SYNTRON

Gasoline Hammer

PAVING BREAKER

BUSTING Concrete CUTTING Asphalt
DIGGING TAMPING
Clay and Shale Backfill
and a lot of other jobs.

Consumes about 2 qts. of low-test fuel per hour—no big compressor to operate. Easily handled by any one workman—no crew necessary.

Write For New Illustrated Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 79 if you write the maker

Reduce starting current draw

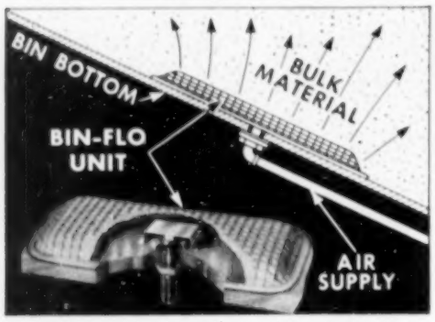
with the **Wagner** Increment Motor and Starter Combination

On any application where reduced current draw at start is required because of locked current restrictions, you can limit the in-rush of motor current during the starting period with the low cost Wagner Increment Motor and Starter "Package." This combination is economical to install and permits the use of high grade magnetically operated control equipment at a low purchase price. Why not investigate this Wagner combination today? Write for full information, or consult the nearest Wagner branch office.

Wagner Electric Corporation
6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 80 if you write the maker



BIN-FLO USES SMALL VOLUME OF AIR AT LOW PRESSURE

KEEPS BULK MATERIALS MOVING

BIN-FLO units in bins, chutes, hoppers, etc., restore flow characteristics to dry, finely ground materials which tend to pack or bridge in storage. Types for all materials and conditions. No moving parts; simple installation; negligible operating cost; no maintenance cost.

BIN-DICATOR bin level indicator—The Eyes of the Bin—automatically reports levels of materials in storage; automatically controls filling machines; prevents waste.

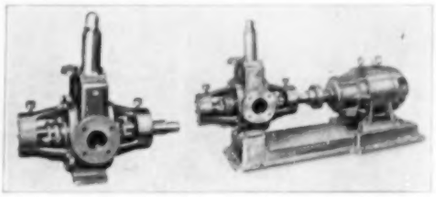
NEW 20-PAGE BOOK FREE

THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

BREVITY—Identify by IEN - 81 if you write the maker

PUMP . . Vane type rotary, 25 to 1,000 gpm. at 850 to 210 rpm.

Source: WORTHINGTON PUMP & MACHINERY CORP.
423 Worthington Ave., Harrison, N. J.



Detailed in Bulletin W-485-B1

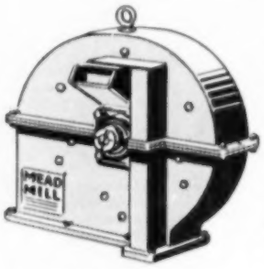
Six radial vanes are mounted in a rotor to ride inside a removable liner in this new heavy-duty rotary pump. The vanes are held outward against the liner by pressure of the pumped fluid so they compensate for wear. End plates and vanes can be reversed when wear does occur. The pump is available in external-bearing design, as shown in the illustration, to handle non-lubricating, slightly abrasive or corrosive liquids. It also is made with internal bearings and can be supplied plain or with a relief valve.

Sizes range from 2 to 12-in. pipe on the inlet and from 2 to 10-in. on the outlet. Operating pressure is to 200 lb. for sizes to 6 in., based on the outlet, for the external-bearing design. It is to 300 lb. for sizes to 3 in. for the assembly equipped with internal bearings. Construction includes standard-fitted, bronze-fitted and all-bronze designs. Many of the parts in the various sizes are interchangeable to minimize stock keeping.

BREVITY—Identify by IEN - 82 if you write the maker

PULVERIZING . . Impact machine to powder dry grindable materials

Source: MEAD MILL CO.
14622 E. 7 Mile Road, Detroit 5, Mich.



Welded steel housing

Plastics, food products, caustic soda, dry colors, insulating materials, asbestos, dyestuffs are typical materials that can be reduced to powder form in passage through this recently redesigned machine. It is available now in welded-steel construction in five sizes for an overall range between 100 lb. and 8 ton per hour. The smallest unit is driven by a 1-hp. motor at 5,500 rpm. The largest calls for a 30-hp. motor for operation at 1,800 rpm.

The rotor shaft is mounted in flange-assembled ball bearings to carry a tool-steel beater disc and alloy-steel impact beaters. Material fed in at the side of the upper housing is acted upon by the beaters and corrugated impact rings for size reduction to pass through tool-steel bar screens available in five mesh sizes.

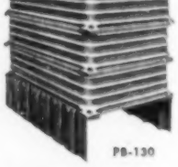
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 83 if you write the maker

HEADQUARTERS for materials handling equipment

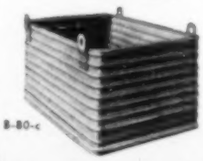
The success of modern production methods depends upon the efficiency with which materials and products in various stages of fabrication can be handled.

Truscon's Pressed Steel Division—nationally known for the quality of its products and the dependability of its service—is fully equipped and prepared to handle your material handling equipment requirements. The Pressed Steel Division's central location, moreover, assures efficient service for all your needs.



PB-130

Descriptive catalog on TRUSCON STEEL BOXES & SKIDS free on request!



B-80-c

TRUSCON Steel Company
PRESSED STEEL DIVISION • 6200 Truscon Ave., Cleveland 4, O.
Subsidiary of Republic Steel Corporation

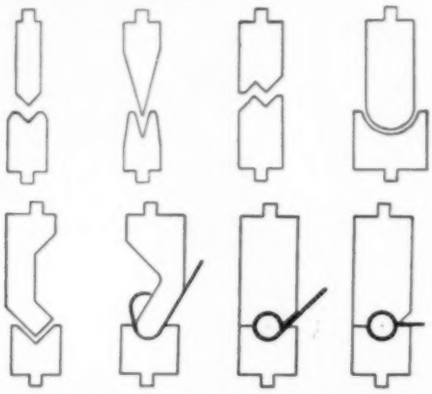
BREVITY—Identify by IEN - 84 if you write the maker

PRESS BRAKE FORMING DIES

PROMPT DELIVERY

Any Metal—any gage—to fit any make of machine

Here are a few examples:



RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES AND GANG SLITTERS

BREVITY—Identify by IEN - 85 if you write the maker

Ledeen **VALVES**

14 Models for Positive, Easy Actuation of Air or Hydraulic Cylinders

HAND OPERATED 4-WAY VALVE
A simple, economical valve, suitable for most requirements. Requires only light turning effort. Built for long life.

FOOT OPERATED 4-WAY VALVE
Leaves hands free for other work. Requires only light pedal pressure. Works like accelerator throttle. Particularly valuable for women workers.

POWER OPERATED 4-WAY VALVE
For remote control with or without electricity. Can be controlled by microswitch, cam, finger or toe operation.
Ledeen Valves embody the rotating disc construction, and are designed for controlling the flow of air, oil or water. They are made in 14 different models for 5 different cycles, in 6 sizes.

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

Write for Bulletin 510

BREVITY—Identify by IEN - 86 if you write the maker

MARK THE LINE OF SAFETY

In Plant Warehouse Parking Lot

PAINT TRAFFIC LINES and guide lines fast with the Mark-Rite Liner on concrete, black top or brick surfaces. Economical one-man operation. Gravity feed. Requires no air pressure. Is easy to clean. Thousands in use.

Mark-Rite power spray models are available in either self-propelled or push type. All Mark-Rite Liners are fully guaranteed. Write for literature. Dept. M-1.

ORDER YOURS TODAY
ONLY $94.50
F. O. B. LOS ANGELES

UNIVERSAL MFG. & SALES COMPANY
8706 S. Santa Fe Ave., South Gate, Cal.

Mark-Rite LINE MARKERS

BREVITY—Identify by IEN - 87 if you write the maker

SEALTITE conduit

is easy to install—

because it's

Flexible

. . . it protects wiring by resisting oil, grease, water, chemicals and acid fumes . . . and it saves time because you can cut it on the spot. Available at your regular electrical supply house. The American Brass Company, American Metal Hose Branch, Waterbury 20, Conn. In Canada: The Canadian Fairbanks-Morse Company, Ltd.

AMERICAN

SEALTITE

ELECTRICAL CONDUIT

*Trademark

BREVITY—Identify by IEN - 88 if you write the maker

GET ALL 3 with ALL-METAL

CHROMALOX

RADIANT HEATERS

Uniform heat at the turn of a dial is yours with Chromalox Electric Radiant Heaters. Fingertip control assures exact operating temperatures for varying needs. Different zones of heat can be had within the same oven by setting up individual controls for each bank of heaters. Chromalox Units operate in low and high ambient temperatures; provide glareless radiation in infrared wavelengths absorbed efficiently by all colors, textures, surfaces. All metal construction withstands shock, vibration, moisture; eliminates contamination; is safe with volatiles.

TYPICAL TIME and MONEY SAVING USES

- Drying
- Dehydrating
- Baking
- Pre-Heating
- Heating
- Degreasing

and many other applications

For More Know-How Send for Application Reports on Chromalox Radiant Heaters

EDWIN L. WEIGAND CO., 7506 THOMAS BLVD., PITTSBURGH 8, PA.

See Chromalox Electric Heaters Advertisement, Page 5

CHROMALOX IB-10

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 89 if you write the maker

MARMAN clamps *Solve Difficult Hose, Duct, or Tube Fastening Problems!*

Marman has engineered a series of standard clamps that will fit most all applications regardless of their specialized or exacting nature. You can save time and money with Marman Clamps because they go on fast, hold tight, and seal positively.

MARMAN UNIVERSAL CLAMPS

provide quick installation and a wide range of adjustment. They can be used over and over again.

MARMAN T-BOLT CLAMPS

give extra strength with an even circumferential take-up which assures an efficient seal.

MARMAN QUICK COUPLER CLAMPS

have a patented quick opening tension bolt. They are especially designed for installations that require frequent removal for cleaning or maintenance.

Marman Clamps are made from corrosion-resistant stainless steel and are available in various standard widths and diameters. All Marman T-Bolt and Quick Coupler Clamps are supplied with AN365 nuts unless otherwise specified. Whatever your hose, duct or tube fastening problem, Marman Clamps can solve it better, faster and easier.

WRITE DEPT. I-1 for more information about Marman Clamps

MARMAN PRODUCTS CO., INC.
940 WEST FLORENCE AVENUE
INGLEWOOD, CALIFORNIA

BREVITY—Identify by IEN - 90 if you write the maker

CONVEYING . . Portable belt unit for stacking, loading, conveying

Source: INDUSTRIAL ENGINEERING & MFG. CO.
801 Main St., Brimfield, Ind.

Floor lock holds position

Model 600-U is a new adjustable assembly of motor-driven belt conveyor with roller feed and take-off sections, all on a caster-equipped stand. The conveyor can be set for movement at an upward angle or for horizontal conveying. It operates at 54 fpm. with its ¾-hp. reversible motor assembled inside the channel frame.

The main section is available in lengths of 12, 14, and 16 feet. The rough-top belt can be specified in widths of 12, 16 and 18 inches. Guard rails on the two sides are adjustable in and out through 6 in. to provide clearance and to keep various sizes of cartons, bags or boxes on the belt. A power-driven belt feeder can be applied in place of the roller units shown.

BREVITY—Identify by IEN - 91 if you write the maker

PLASTIC . . Thermosetting material contains reinforcing fiber glass

Source: LIBBEY-OWENS-FORD GLASS CO.
2114 Sylvan Ave., Toledo 6, Ohio

$1 and $1.10 per pound

Reinforced Alkyd is a new material in the company's Plaskon line of thermosetting plastics. This material is a fiberglass and plastic-resin combination in the line previously described IEN 6565-51. Characteristics are high impact strength and the fact that the plastic can be molded at high production rate on standard plastic-molding equipment.

Two forms are available, both of which can be preformed but do not require preheating because of their fast curing properties. Molding can be by straight compression or transfer action. One of the two forms has particularly good flame resistance. Typical applications include insulators, electrical collector bodies, coil spools for magnetic starters, insulators for electrode holders, terminal blocks, electric brush holders.

BREVITY—Identify by IEN - 92 if you write the maker

PROTECTING . . Helmet liner fits over head, neck and ears

Source: STANDARD SAFETY EQUIPMENT CO.
226 W. Ontario St., Chicago 10, Ill.

Bald men love it

Windsock is a new lightweight fabric throw-away type of head covering to be worn under a helmet or safety hat. It is warm and snug fitting. It shuts out drafts, prevents contact between the hat itself and a wearer's head.

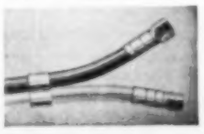
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 93 if you write the maker

TWO HOSES...ONE LINE!

TWIN-WELD HOSE SPEEDS WELDING STOPS TANGLING

Patented Twin-Weld® combines a green oxygen line and a red acetylene line molded into one compact unit. No more dangerous, tangled separate hoses . . . the operator has one neat, flexible, non-kinking line that makes his job safer, faster, more efficient. Especially useful in close-quarter work. Call your Hewitt Rubber distributor, or write Hewitt Rubber Division, 240 Kensington Avenue, Buffalo 5, N. Y.



HEWITT-ROBINS INCORPORATED

BREVITY—Identify by IEN - 94 if you write the maker

CARTON COSTS DRASTICALLY REDUCED

With a "Package" Carton Former, *inexpensive die-cut blanks* replace costly hand set-up or factory-made cartons . . . This alone is a big saving! And you make them in your plant—just as you need them. The machine produces strong, firmly glued cartons at speeds up to 162 per minute. It can be adapted to many different types of cartons and is adjustable for various sizes. Requires no operator—merely has to be kept supplied with blanks.

Write for literature giving full information

• CARTON DIVISION •

PACKAGE MACHINERY COMPANY
SPRINGFIELD MASSACHUSETTS
NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS
DENVER LOS ANGELES SAN FRANCISCO SEATTLE DETROIT MONTREAL

BREVITY—Identify by IEN - 95 if you write the maker

RESISTS VIOLENT TEMPERATURE CHANGES

This resistor survives temperature fluctuations over the widest range—even from 340 to - 55°C, repeatedly.

In Ward Leonard Vitrohm resistors, all components have *matched* thermal characteristics.

This is because the vitreous enamel coating and ceramic cores are formulated and *made* by Ward Leonard . . . wire drawn to Ward Leonard's specifications. They react uniformly to temperature changes.

Write for Vitrohm Resistor Catalog, Ward Leonard Electric Co., 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS • RHEOSTATS • RELAYS • CONTROL DEVICES

BREVITY—Identify by IEN - 96 if you write the maker

CUT IDENTIFICATION COSTS

with BRADY Printed Self-sticking ROLL TAPES

SAVE OPERATORS TIME • ELIMINATE WASTE MOTIONS • GET QUICK, POSITIVE IDENTIFICATION

Label parts, pieces, assemblies, materials, etc., with Brady Printed Tape. Sticks to any clean, dry surface without moistening. Applied by hand or automatic dispenser.

Any wording, numbers, letters, trademarks or symbols printed to your order on cellophane, acetate blue, paper or cloth tapes to fit your job requirements.

Choose from a variety of standard colors, roll lengths and widths.

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MANUFACTURERS OF SELF-STICKING PRODUCTS

W. H. BRADY COMPANY
670 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 97 if you write the maker

Defense Contracts Call for Hinges? Call on STANLEY...

You just specify the hinge you want. Stanley does the rest, from first sketch to finished product.

Stanley gives you the advantage of expert designers and production engineers, complete research and tool-making facilities—the particular plating and finish best suited to your needs.

As the world's largest producer of hinges, Stanley is geared for efficient production to meet your D. O. deadlines. Write for full information—not only on special hinges, but drawings and stampings as well—now!

PRESSED METAL DIVISION
The Stanley Works New Britain, Conn.
New York • Chicago • Detroit • Seattle
San Francisco • Los Angeles

STANLEY
Reg. U.S. Pat. Off.
HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 98 if you write the maker

PROTECT Your Oil or Steam Lines Against Leaky Joints with

KEY GRAPHITE PASTE

Thread and gasket connections on oil lines . . . either hot or cold . . . or high pressure steam lines . . . will not leak when sealed with Key Graphite Paste.

This sealing compound expands when it is heated, forming a perfect seal. Assembled joints will not freeze in service. Key preserves threads and gaskets and, above all, it is economical to use because it goes several times further than ordinary pipe dopes.

Ask your jobber for Key Graphite Paste or take advantage of our FREE sample offer.

Send For FREE SAMPLE

Try Key Graphite Paste at our expense

KEY Company

KEY COMPANY
2651 McCausland Ave., East St. Louis, Ill.

BREVITY—Identify by IEN - 99 if you write the maker

FELT! BY THE YARD
FELT! BY THE ROLL
FELT!
IN CUT PARTS

WE MAKE IT . . . WE CUT IT . . . WE SELL IT . . .

All grades • All colors • All textures
All thicknesses • All consistencies

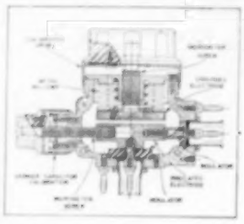
WRITE TODAY FOR FULL DETAILS

THE FELTERS COMPANY
210-I SOUTH STREET, BOSTON 11, MASSACHUSETTS
Offices: New York, Philadelphia, Chicago, Detroit, St. Louis.
Sales Representatives: San Francisco, Dallas
MAKERS THE FELT FOR THE PARTS IT CUTS

BREVITY—Identify by IEN - 100 if you write the maker

TESTING . . Sample holder to check dielectric properties of insulation

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.



Detail technical data on request

Type 1690-A is a new sample holder of the Hartshorn type for use in measuring dielectric constant and dissipation factor of solid dielectric samples over a frequency range from 0.1 to 100 megacycles. The holder can be used also in measuring these quantities at audio frequencies. The sample to be tested is inserted between stationary and movable electrodes measuring 2 in. in diameter after opening a pivoted lid at the side of the aluminum housing. This lid is then closed and secured so the sample is completely shielded.

The stationary electrode beneath the movable one is insulated. The upper movable electrode is grounded and connected to a micrometer screw graduated in 0.5-mil divisions. A reading as small as 0.1 mil can be estimated. A release mechanism in the adjustment disconnects the drive at a predetermined pressure between the electrode and the sample.

A vernier capacitor with a range of 5 micromicrofarads is provided at the side of the housing parallel to the electrode contact surfaces. It determines width of resonance curves.

BREVITY—Identify by IEN - 101 if you write the maker

DRILLING . . Air hydraulic cylinder feeds, retracts drill machine spindle

Source: GENERAL PACIFIC CORP.
1503 E. Washington Blvd., Los Angeles 21, Calif.

Shield covers adjustment

New guard to prevent tampering with the depth-control setting has been added to the company's drilling-machine control, previously described IEN-885-51. The guard encloses the adjustment nut and locks in place.

Time Saver trade names the control itself. It provides for a maximum stroke of 4 in. and is actuated by momentarily depressing a foot valve to admit compressed air from a shop line. The unit then sets up rapid approach, changes to feed action, releases the air pressure and reverses at the predetermined depth for return to top position. A hydraulic check is adjustable for feed rate. Air pressure can be adjusted for approach rate also when this is desired.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 102 if you write the maker

Bulletin 800 Push Buttons

A-B Quality

- Standard, heavy duty, or oiltight enclosures
- Hundreds of types and combinations

Double-break, silver-alloy contacts in these rugged push button stations insure long service without failure. An almost endless variety of combinations makes them adaptable to every need. Special buttons, pilot lights, selector switches, etc., available in the same housings to meet your specific needs. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 103 if you write the maker

Tells how MALSBARY Steam Cleaners can cut your cleaning costs, decrease machinery downtime and reduce fire hazards.

Explains difference between heavy duty cleaners and steam vapor models.

Describes and pictures all 5 MALSBARY models, enables you to pick right size for your job.

Contains easy-to-compare chart of pressures, capacities and temperatures.

Write for your copy TODAY. No obligation.
Ask for Catalog 150.

MALSBARY MANUFACTURING CO. SINCE 1921
Room 10
845 92nd Ave.
Oakland 3,
Calif.
22

BREVITY—Identify by IEN - 104 if you write the maker

Plant engineer installs six
MICRO Precision Switches
for automatic control of grit blasting fixture

Plant Engineer Fred Sebring of Thompson Pipe and Steel Company, Denver, installed six MICRO limit switches on a grit blasting fixture which permit automatic control of the cleaning of pipe seams prior to welding.

The formed pipe is pushed into the fixture and three limit switches take over the control of the blasting. The other three switches stop the feed motor. They are placed in sequence on the fixture to accommodate different lengths of pipe.

Plant production men in every type of industry are giving old equipment new life and lowering production costs by the use of MICRO precision switches. Write today for your copy of MICRO TIPS . . . full of practical ideas like this.

• *There is a MICRO SWITCH Distributor near you. They are located in 122 cities. Look under "Switches, Electric" in your classified phone book.*

The 1M1T MICRO LIMIT Precision Limit Switch . . . a rugged, heavy duty, sealed precision limit switch with many adjustable features. Also available with straight plunger actuator and roller plunger actuator for "in line" operating motion.

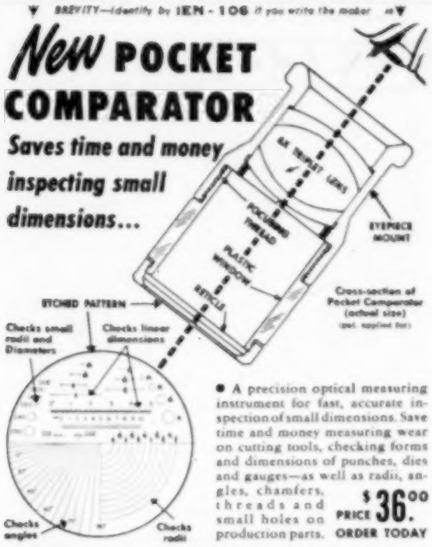
Three MICRO 1M1T limit switches shown on grit blasting fixture at factory of Thompson Pipe and Steel Company.

MICRO SWITCH
FREEPORT, ILLINOIS
MICRO Snap-Action Switches Honeywell Mercury Switches
A Division of Minneapolis-Honeywell Regulator Company

BREVITY—Identify by IEN - 106 if you write the maker

New POCKET COMPARATOR

Saves time and money inspecting small dimensions...



● A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00 ORDER TODAY

a product of BELL & HOWELL CO. distributed by

Write for FREE descriptive folder

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

BREVITY—Identify by IEN - 107 if you write the maker

YOUR BEST PROTECTION AGAINST INTERRUPTED WATER SERVICE

Install a Horton elevated water tank for a more dependable water supply 24 hours a day. Gravity pressure is your guarantee of uninterrupted service — even during emergencies.

Horton elevated water tanks are built in capacities from 5,000 to 3,000,000 gallons. When requesting quotations, state capacity required, dimensions and location of the tank.

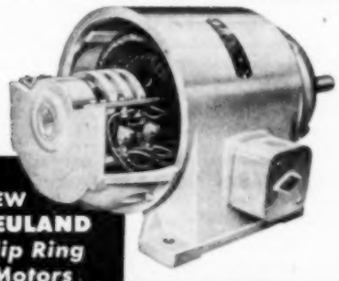
CHICAGO BRIDGE & IRON COMPANY

2123 McCormick Building • Chicago 4, Illinois

Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Salt Lake City
San Francisco • Seattle • Tulsa

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

BREVITY—Identify by IEN - 108 if you write the maker



NEW REULAND Slip Ring Motors

FEATURE SHORTER OVERALL LENGTH VERSATILE, FLAT END BELLS

Reuland Slip Ring Motors provide both (1) variable speed and (2) high starting torque on low starting current. Ideal for crushers, cranes, fans, etc.

FLAT END BELLS permit easy, direct-mounting of equipment on either end.

SHORTER LENGTH assures simpler mounting in tight spaces. (Same dimensions as a squirrel cage motor.) Greater shaft rigidity is obtained through shorter bearing-to-bearing spacing.

WITH GEAR REDUCERS Reuland Slip Ring Motoreducers provide maximum versatility.

AVAILABLE in drip-proof or totally enclosed designs. Wide range of ratings.

Write for engineering folder covering the complete Reuland Line—No. RE-1000 —1

Inquiries invited on special motors designed to order.

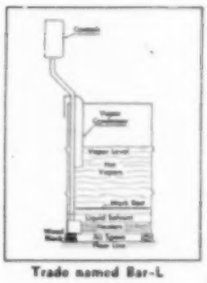
REULAND ELECTRIC CO.

ALHAMBRA, CALIFORNIA • DISTRIBUTORS IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 109 if you write the maker

CLEANING . . Degreasing equipment uses standard steel drum as the tank

Source: MANUFACTURERS PROCESSING CO.
P. O. Box 6-A, Detroit 20, Mich.



Trade named Bar-L

New assembly of ring-type electric immersion element and a water-cooled condenser with the required controls applies as a unit in a standard 55-gal. steel drum. It heats and controls solvent to degrease work lowered into the drum in a basket or by other suitable suspension means. The heater connects to a 220-volt single-phase power source. The finned coil in the condenser is connected to a cold-water line. Operation calls for 10 to 12 gal. of solvent such as trichlorethylene. The condenser limits vapor level in the drum to a point below the top.

BREVITY—Identify by IEN - 110 if you write the maker

INSULATING . . Plastic tape for cable, equipment, underground pipe

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., St. Paul 6, Minn.

Width range ¼ to 16 inches

Scotch Brand No. 21 is a new electrical insulating tape with a black vinyl plastic backing 20 mils in thickness. The tape is characterized by its mechanical strength, insulation resistance of 200,000 megohms, dielectric strength of 22,500 volts per mil and electrolytic corrosion factor of 1.0. It is intended to protect and insulate cables and high-tension leads subject to wear and to wrap bus bars carrying high voltage. It can be applied to corrosion-proof pipe, cable and equipment laid underground where resistance to cuts and abrasion by rocks during the back-filling operation is a factor. Packaging is in 36-yd. rolls.

BREVITY—Identify by IEN - 111 if you write the maker

GAGE . . Polystyrene plastic unit checks bolts, nuts, screws for size

Source: SORRELL & SONS CO.
297 Argyle Road, Rocky River 16, Ohio

Lists at $1

New gage measures 7¼ in. in overall length. It carries a set of holes and lugs to check threaded fastenings for size. It also has a scale graduated in 16ths along one edge. The openings through the center range in size from No. 8 to ¾ inch. The lugs range from No. 8 to ⅝ inch. Shoulders on the lugs correspond to inside diameters of coarse and fine threads.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

BREVITY—Identify by IEN - 112 if you write the maker

The "One Best Way" for Many Materials-Handling Jobs

MORRIS Centrifugal SLURRY PUMPS

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,000 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

Lower Cost Per Ton or Million Gallons

Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 18.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

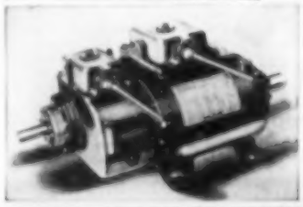
MORRIS CENTRIFUGAL PUMPS

BREVITY—Identify by IEN - 113 if you write the maker

plate or platform mounting

9000-B (1-5 H. P.) 5 H. P. capacity with input speed of 900 r. p. m. **Gear Ratios:** 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.

9100-B (5-10 H. P.) 10 H. P. capacity with input speed of 900 r. p. m. **Gear Ratios:** 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.



9300 (30 H. P. capacity with input speed of 900 r. p. m.) 8 speed Changes in Geometric Progression of 1.29. (Total reduction of 6:1).

Send for catalog and complete information.

up to 50 h. p.

WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO. • SAN DIEGO • DETROIT • MICHIGAN

BREVITY—Identify by IEN - 114 if you write the maker

STOP

START

STOP

START

Only YALE gas trucks are engineered to take daylong punishment—

Only Yale has Fluid Drive . . . saves Clutch life and delivers smooth, unfailing power at any speed.

Only Yale has 65 HP 6-cylinder engine, cushion-mounted for less vibration, runs cooler and gives full *floating* power at all times.

Only Yale has Hypoid Gearing, fully enclosed, protected against dirt and other sources of wear; "floating" axles absorb road shock.

See how YALE 3-powered economy can cut gas truck operation costs for you. Get the *whole* story NOW. Send for free detailed book.

YALE & TOWNE

The Yale & Towne Manufacturing Co., Philadelphia 15, Pa.

YALE is a registered trade mark of The Yale & Towne Manufacturing Co.

MAIL THIS COUPON TODAY

The Yale & Towne Manufacturing Co., Dept. 361
Philadelphia 15, Pa.

Please send me your free new detailed bulletin, THE YALE GAS TRUCK

COMPANY _____
NAME _____ TITLE _____
STREET _____
CITY _____ STATE _____

In Canada: The Yale & Towne Manufacturing Co., St. Catharines, Ont.

YALE GAS AND ELECTRIC TRUCKS • YALE WORKSAVERS
YALE HAND TRUCKS • YALE HAND AND ELECTRIC HOISTS

BREVITY—Identify by IEN - 116 if you write the maker

BREVITY—Identify by IEN - 117 if you write the maker

The FIRST Roller Coaster

Originally known as the Switchback, the first Roller Coaster was built in Paris in 1816. The crude originals were soon discontinued because of numerous fatalities. However, in 1880 they were again introduced in Paris and the United States simultaneously—and have since been enjoyed by millions.

JERVIS B. WEBB CO. was the FIRST to develop Horizontal Roller Curve Assemblies

Typical Webb Horizontal Roller Curve Assembly—The Webb Roller Curve is the most economical serviceable and satisfactory unit for carrying an overhead conveyor chain around a horizontal curve. Chain and trolleys are held in the correct vertical position by ball bearing rollers which reduce both friction and wear to a minimum. Roller Curves are made in various radii and arcs for varying needs. Rollers are mounted between two segment bars.

The Working Part Of A Roller Curve Is The Roller—Rollers used in Webb Roller Curves are specially designed and built for the service. Available for two types of lubrication—oil hole in cover and grease fitting in drilled center pin. In either case, the Roller Curve is assembled so as to make lubrication easy. The design of the Roller Curve is such that the rollers are readily replaceable without dismantling.

CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
3915 ALPINE AVE. DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES
FACTORIES IN DETROIT . . . LOS ANGELES . . . HAMILTON, ONT.

BREVITY—Identify by IEN - 118 if you write the maker

Quiet Telephoning in noisy locations

You can clearly hear the other party in the hushed interior of a Burgess-Manning Acousti Booth. A heavy blanket of sound-absorbent material lining the walls traps the noise. Conversations are understandable. Doorless construction. Clean, airy interior. Modern appearance. Floor and wall models. Suitable to any location.

Mail Coupon for Free Booklet
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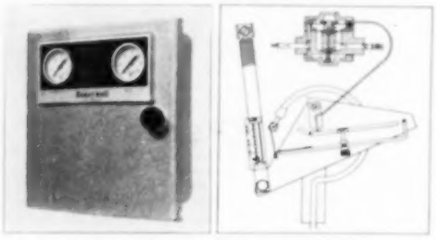
Architectural Products Division
5970 A Northwest Hwy., Chicago 31, Ill.
Please send me your booklet describing Burgess-Manning Acousti Booths
Name
Firm Name
Street City State

BREVITY—Identify by IEN - 119 if you write the maker

CONTROL . . Pneumatic instrument regulates pressure at a diaphragm valve

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO. 4456 Wayne Ave., Philadelphia 44, Pa.



Seven ranges maximum at 40 to 1,500 pounds

Line pressure to be controlled by this new non-indicating Pressure Pilot is connected to a bourdon tube enclosed in the control housing. Any change in the pressure will act through the tube to increase or decrease the air-escape opening at a nozzle. It connects to the top chamber in a diaphragm assembly, also enclosed in the housing.

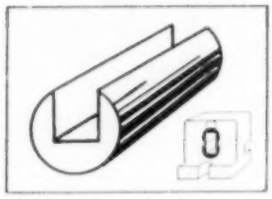
Air pressure controlled at 20 lb. enters this diaphragm assembly, passes up to the top chamber and down to one at the bottom. It flows through a bottom port to the line connecting to a diaphragm-controlled valve in the line. The diaphragm mechanism in the instrument follows changes in pressure in the upper chamber to admit more or less air to the line leading to the valve for pressure-controlled action.

Gages on the pilot housing read incoming and outgoing-air pressure. Adjustment in the mechanism permits setting it for direct or reverse action. The adjustments also provide for fine setting of the operating point and for proportional-band adjustment between 1 and 100 per cent of total range. A leaf spring takes up over-travel of the bourdon tube.

BREVITY—Identify by IEN - 120 if you write the maker

SLEEVE . . Slotted steel unit to place square opening in round hole

Source: FORMED TOOLS CO. 43041-45 Grand River, Novi, Mich.



Square holes are easy

No broaching is required to place a square or rectangular opening in a work piece when this new slotted sleeve is employed. The work is drilled and reamed and the sleeve is pressed into position. The slot then presents the required opening. The sleeve was designed originally to position tool bits in holders in connection with locking and positioning screws on and back of the bit. It is held in place by a lock pin if a press fit is not employed.

Nine sizes range from 0.3125 to 1.5000 in. in outside diameter. The smallest is 1 in. in length. The largest measures 4 inches. The smallest takes a $\frac{1}{16}$-in. tool. The largest has 1-in. width capacity in the slot. List price is $1.80 to $3.80.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 121 if you write the maker

DELICATE *but* PERMANENT

Matthews "Airgrit" gently breathes a permanent mark on metal, plastic, glass or fibre parts . . . parts with a ground or polished surface which conventional marking tools would marr or distort . . . in a fraction of a second per mark. Write Matthews for complete information and literature on "Airgrit".

JAS. H. MATTHEWS & CO.
3948 FORBES ST. • PITTSBURGH 13, PA.
NEW YORK • BOSTON • PHILADELPHIA
CHICAGO • CLIFTON, N. J.

BREVITY—Identify by IEN - 122 if you write the maker

CESCO RIGHT . . . before your Eyes!

Put CESCO shields right before the eyes of your workers! They're *right* for safety—sturdily constructed with correct designing for repelling harmful objects. *Right* for comfort—with adjustable headgears formed to the contour of the head. And there's the *right* shield for every job in the wide range of styles and materials from which to choose. **Send TODAY** *for CESCO literature and the name of your CESCO safety equipment distributor*

CHICAGO EYE SHIELD COMPANY • 1236 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

BREVITY—Identify by IEN - 123 if you write the maker

"KNOW HOW" IS IMPORTANT HERE!

In Universal's BIG LINE OF METAL HOSE Every type is ENGINEERED for SPECIFIC RESULTS

For example—

UMH Square-Locked Low Pressure Hose . . . engineered for efficiency in low pressure exhaust or intake installations.

UMH Interlocked High Pressure Hose . . . engineered for efficiency in conveying steam, water, tar, etc.

UMH Seamless Bronze Hose . . . engineered for efficiency in transmitting solvents, oil, refrigerants . . . under pressure, motion and vibration.

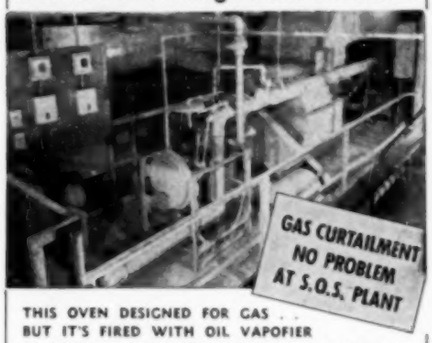
PLUS . . . many additional types of metal hose for every type of installation.

Send us an outline of your requirements for experienced engineered recommendations. Ask for Catalog U-101, too . . . today!

UNIVERSAL METAL HOSE CO.
2121 S. Kedzie Avenue • Chicago 23, Illinois

▼ BREVITY—Identify by IEN - 125 if you write the maker ▲▼

Will You Have Enough GAS this Winter?



THIS OVEN DESIGNED FOR GAS . . BUT IT'S FIRED WITH OIL VAPOFIER

The S.O.S. Company, in Chicago, has insured production against losses due to seasonal gas curtailment by installing Vapofier as gas standby. Change-over to and from gas is made without loss of flame at the burners in a matter of seconds. The same piping, burners, automatic controls and safety devices are utilized.

Capacities from 70,000 to 4,000,000 B.T.U.'s per hour

Should your processing be annealing, galvanizing, heat treating, glass manufacturing, industrial drying, paint, core or bread baking, there's a Vapofier to fit your needs.

MAKE YOUR OWN GAS

Do away with Gas shortages this winter. Send for FREE booklet "Make Your Own Gas with Vapofier."

VAPOFIER CORP., 10326 S. Throop St., Chicago 43, Ill.

▼ BREVITY—Identify by IEN - 126 if you write the maker ▲▼

Better rubber products are made with Du Pont NEOPRENE

Courtesy: Remington Arms Company, Inc., Bridgeport, Conn.

Neoprene insert in new stud driver muffles noise . . . resists abrasion, heat and oil

Actuated by a powder cartridge, this stud driver will fasten steel or wood to concrete or steel surfaces. For example, it can be used to hang sash or attach electrical fixtures to brick walls—at speeds up to 100 times faster than conventional methods. And this safe, simple-to-operate new tool is built to last—with one of its vital parts made of Du Pont neoprene.

Even when driving studs through steel, the neoprene insert under its safety shield muffles noise. Here resilient neoprene withstands punishment caused by abrasion from rough, unfinished surfaces. Lubricating oils or grease won't soften or disintegrate it. And neoprene resists even the blistering heat of sun-baked metal.

Advanced design makes this ingenious tool a tremendous time- and cost-saver. And Du Pont neoprene is essential to its success, just as it is to thousands of resilient parts and products used in industry today. While Du Pont makes no finished products of neoprene, your rubber-goods manufacturer or distributor will be happy to tell you about the neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-1, Wilmington 98, Delaware.

NEOPRENE

The rubber made by Du Pont since 1932

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

▼ BREVITY—Identify by IEN - 128 if you write the maker ▲▼

TESTING . . Portable X-ray equipment, two sizes rate 7/8 and 2 in. in steel

Source: ADVANCE ENGINEERING CO.
51 Great Plain Road, Danbury, Conn.

Made in Denmark

Fedrex trade names portable X-ray equipment, new in the United States. It is designed to carry to the job and set up there with connection to ac. power input at 110 to 440 volts. Two sizes rate 175 and 120 kvp. The larger unit can be entered through a 12-in. opening. It weighs 180 pounds. The smaller one weighs 130 pounds. A control unit is assembled in a separate rectangular housing. It weighs 90 pounds.

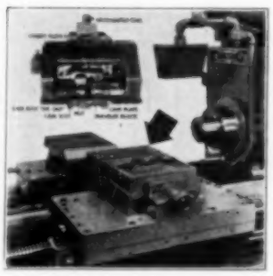
Insulated handwheels at the two ends provide a rolling support and also a stand on which the unit can be set up. It photographs through an opening in the side. An exposure interval of 2 to 4 min., with the larger of the two units, will penetrate 2 in. of steel.

The main assembly encloses the X-ray tube, a high-voltage transformer, filament transformer and cooling pump. The separate control unit mounts the instruments, regulating devices, exposure timer and protective relays. Connections are waterproof so the equipment can be used and left out of doors.

▼ BREVITY—Identify by IEN - 129 if you write the maker ▲▼

LATHE . . Rear cross slide is cam operated on Duomatic lathe

Source: LODGE & SHIPLEY CO.
3051 Colerain Ave., Cincinnati 25, Ohio



New slide is standard

Rigidity characterizes the operation of a new cam-operated rear cross slide designed for use on the company's Duomatic lathe in place of the regular rack-and-pinion slide. It is intended for forming, grooving, necking, but not for turning since the original rack-and-pinion slide is better suited for this last named purpose.

A cam feeds the slide into the work. It is designed so it moves inward at a constant rate and then tapers off feed so the movement "dies out" as the tools reach the end of their predetermined stroke. Thus the cam itself determines the work diameter and keeps it uniform from one piece to the next. The same cam is used for all jobs, changes in feed being made by changing pick-off gears on the front of the machine control box.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 130 if you write the maker ▲▼

Glove Buying Know-How Pays You Dividends!

NL-14 Duplex. Lightweight, elastic knit lined, neoprene-coated. Non-slip fingers. Utmost comfort.

PIONEER

Stanzoils®

The *right* glove for every job pays off in:

★More glove service at lower per-hour cost
★Full protection for your workers
★Fewer work stoppages and injury claims
★More production through faster-working hands

Lack of glove protection costs you money—but so does loss of worker efficiency. No *one* glove is effective for *all* jobs in your plant. Get the best combination of protection *and* working speed. PIONEER'S new catalog tells you how! *Advice is unbiased, for Stanzoils include all kinds of liquid-tight gloves:* all-neoprene, neoprene or vinyl-coated: 32 styles, weights, sizes, colors. Scientific selection boosts profitable production. Write for this helpful catalog today!

Industrial Products Division

The PIONEER Rubber Company
635 Tiffin Road • Willard, Ohio

STANZOIL

OVER *30 Years* OF QUALITY GLOVE MAKING

▼ BREVITY—Identify by IEN - 131 if you write the maker ▲▼

SQUARE D for a COMPLETE LINE of INDUSTRIAL PRESSURE SWITCHES

Write for Bulletin 9012
Square D Company
4041 North Richards Street
Milwaukee 12, Wisconsin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

▼ BREVITY—Identify by IEN - 132 if you write the maker ▲▼

300 Bends Per Hour with NEW Semi-Automatic PINES BENDING MACHINE

SAVES TIME, CUTS COSTS ON SHORT RUN, PRODUCTION, MAINTENANCE WORK

SPECIFICATIONS
PINES SERIES 1400 BENDER

- Maximum Capacity—1" O.D. 16 ga. steel tube.
- Maximum Radius of Bend—8½" to centerline.
- Length of Tubes—Up to 5 ft. standard.
- Bending Speed—29 R.P.M.
- Working Height—35".
- Overall Size (Floor Space)—7' x 7'.
- Pressure—1000 P.S.I.
- Pump Motor—3 H.P.
- Pump—7 G.P.M. (Vickers).
- Optional—Adjustable gages . . provision for any length of tube. mandrel for critical bends.

Fast, Easy to Operate—Forms Smooth, Neat Bends Quickly

Eliminates many slow, tedious hand bending operations. Is especially designed to cut costs on work formerly considered too variable for fully automatic equipment. Fast and easy for one man to operate. Hydraulic bending arm forms smooth, neat-looking bends quickly. Clamp and die rollers (or sliding dies) are operated by hand toggle levers. Hand wheel provides immediate angle-of-bend selection. *Typical production:* 300 bends per hour on 1"-16 gage steel tube.

Ask for An Analysis of Your Bending Problems

Write today for free literature. Find out how a Pines Bender can be applied to your work. *Ask for an analysis of your bending problems.* There's no obligation.

PINES ENGINEERING CO. Inc.

635 WALNUT AURORA, ILLINOIS

▼ BREVITY—Identify by IEN - 133 if you write the maker ▲▼

HORMEL *Makes Sure*

. . . with OKONITE cables

At Hormel's Austin, Minn. plant, thousands of dollars worth of meat are constantly being processed. Any breakdown of electrical service would cause a tremendous loss.

Hormel engineers recently chose Okolite-insulated submarine cables to convey power from the municipal plant, under the Red Cedar River, to the Hormel switchboard. Here's why:

Okolite insulation resists corona cutting, heat and moisture, requires no lead sheath even when totally submerged. All Okolite-insulated cables are subjected to super-voltage a-c and d-c tests far in excess of industry specifications.

On any installation where uninterrupted service is imperative, Okonite is your best cable buy. For full details, write for Bulletin IE-1053. The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY

OKONITE insulated wires and cables

▼ BREVITY—Identify by IEN - 134 if you write the maker ▼

One Compact Unit

Syntron F-49 Tubular Feeder feeding to a ball mill in a cement plant. Not only reduced maintenance costs by eliminating items noted, but greatly increased efficiency of operation.

Replaces
- Screw Conveyor
- Sprocket and Chain Drive
- Countershaft
- Belt Drive
- Motor

SYNTRON
"Vibra-Flow"
VIBRATORY FEEDERS
With Variable Control of Rate of Flow

WILL HANDLE—most all types of bulk materials from light, fine powders to heavy, coarse lumps—hot or cold—dry or damp. AT—variably controlled rates from pounds to hundreds of tons per hour. TO—mixers, screens, belts, crushers, blenders, driers, ovens, packaging machines, etc. Write To—

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

▼ BREVITY—Identify by IEN - 135 if you write the maker ▼

NOW . . . A POLISHER THAT'S UNIVERSALLY ADJUSTABLE!

Built for use with the Vonnegut Brush-Backed Polishing Head, this unique tool is designed for sanding, smoothing or finishing contoured patterns—such as mouldings and formed or extruded shapes.

The brush bristles of the head automatically force abrasive strips to conform with and follow the shape of the pattern. The unique spindle stand (adjustable to any angle through 180° from vertical to vertical with head below or above the motor) makes it possible to bring the Vonnegut head into proper relation with a vertical, horizontal or angled surface of any pattern.

Don't hold back. Tell us about your finishing problems; we MAY have the answer to cutting YOUR costs.

VONNEGUT MOULDER CORPORATION
1827 MADISON AVE. • INDIANAPOLIS 25, INDIANA

▼ BREVITY—Identify by IEN - 136 if you write the maker ▼

FREE! 44-Page Book

gives you complete data on wire rope and chain fittings

Save time! Save trouble! Laughlin's authoritative, illustrated Catalog-Data Book answers all types of problems involving wire rope and chain fittings. Read all about the wide array of *standard* Laughlin items. Dispense with needless, costly "specials!" Yours for the asking!

LAUGHLIN
THE MOST COMPLETE LINE OF DROP FORGED WIRE ROPE AND CHAIN FITTINGS

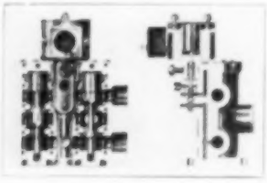
GET YOUR COPY NOW at no cost or obligation

THE THOMAS LAUGHLIN CO.
11 Fore St., Portland 6, Maine
Please send Catalog-Data Book #150 to:
Name ..... Position .....
Company .....
Street .....
City ..... Zone ... State .....

▼ BREVITY—Identify by IEN - 137 if you write the maker ▼

VALVE . . Piston type 4-way, solenoid pilot operated, to 150 pounds

Source: BARKSDALE VALVES
1564 E. Slauson Ave., Los Angeles 11, Calif.



Lists at $49 to $76

Series 1046 is a new double-piston four-way operating valve to control a double-acting cylinder in which pressure is to be applied on alternate sides of the piston without any neutral position. The valve is suited for continuous cycling at rates to 600 cpm. Connection sizes range from ¼ to ⅜ in. for single and dual-pressure operation handling air, light oil, water.

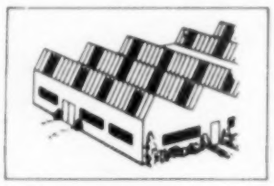
Control centers at a solenoid that can be specified for standard ac. and dc. voltages. The solenoid operates a built-in three-way pilot valve equipped with stainless-steel plunger and ball valve. The ball is held in normally-closed position by a combination of fluid pressure and a light spring. It is moved to open position when the solenoid circuit is closed. The pilot-valve seat is in the form of an O-ring. The main-valve seats are composition rubber molded on brass inserts. Internal parts, including the main valve members, are brass.

The two pistons in the main valve are held in normal "up" position by the fluid action and springs until pressure is admitted through the pilot valve to apply at their upper ends. This moves the two down simultaneously to open one main port to pressure and the other main port to exhaust. The valve stands 5¼ to about 7 in. in overall height including the solenoid enclosure.

▼ BREVITY—Identify by IEN - 138 if you write the maker ▼

BUILDING . . Translucent sheet for windows, skylights, partitions

Source: PLEXOLITE SALES CO.
4221-25 W. Jefferson Blvd., Los Angeles 16, Calif.



Requires no upkeep

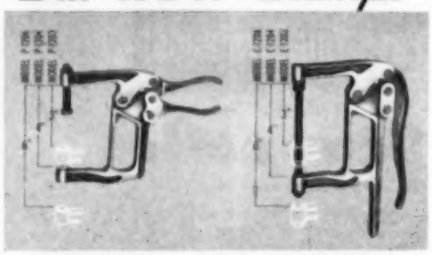
Corrugated and flat sheets to 12 ft. in length conform in width and corrugations to standard roofing siding and decorative sheet in this new translucent plastic reinforced with fiber glass. Application is in window openings, skylights, partitions. The material is inert in contact with moisture, mild acids, alkaline fumes. It is shatterproof and has excellent structural strength. It can be worked with ordinary tools. Colors are green, blue, ivory, coral, aqua, yellow and six pastel shades.

Three thicknesses are $\frac{1}{16}$, $\frac{3}{32}$ and ⅛ inch. Corresponding weights are 6, 8 and 10 oz. per square foot. The company is prepared to supply a suitable adhesive to bond and weatherproof adjoining sheets. The same bolts, screws and other suitable fastenings can be used where the plastic joins metal sidings or roofing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 139 if you write the maker ▼

Six NEW Clamps



STIFFER—YET LIGHTER
REQUIRE LESS EFFORT TO CLAMP

Here is another forward step in KNU-Vise clamps for efficient, fast and secure clamping.

These six new clamps made of heat-treated steel forgings are stiffer, yet lighter, and require less hand effort to clamp. At the same time, a greater clamping force is obtained. In addition, the new hand-hold design of the C-Clamp (at right) provides a guard to protect the user's fingers while clamping. A second spindle, instead of the anvil, can be furnished for special applications.

Sales offices in principal cities. Teletype DE 49.

KNU-VISE PRODUCTS **LAPEER MFG. CO.**
3060 DAVISON ROAD • LAPEER, MICHIGAN
Western Division • 422 Magnolia Street, Glendale, California

▼ BREVITY—Identify by IEN - 140 if you write the maker ▼

NO SPRINGS TO BREAK in the Nutting JACK IT'S ALWAYS DEPENDABLE

The Nutting Jack is the ONLY jack operated entirely by gravity and leverage. With no springs to break, there is no danger of your whole jack-skid system suddenly being put out of service.

One lift truck and two dead skids cost about the same as two Nutting Jacks and twelve semi-live skids. That's one reason why the Nutting Jack and Skid system can be such a money-saver in your plant. Material stored on semi-live skids is made mobile in a hurry. The jack may be coupled to one skid, then uncoupled and coupled to another faster than the time it takes to tell about it.

Send for Bulletin 48-JS

Look in your classified phone directory for your Nutting representative, or write for Bulletin 48-JS. It will pay you to get all the facts on this superior Nutting Jack-Skid handling system.

Nutting makes everything in floor trucks, wheels, casters.

NUTTING TRUCK AND CASTER COMPANY
2013 Division Street Faribault, Minnesota

▼ BREVITY—Identify by IEN - 141 if you write the maker ▼

for easy, on-the-spot, accuracy . . .

The chuck guard on the new Stanley Electric Drills makes it easier for the operator to spot and hold the drill exactly where he wants it. By grasping the chuck guard, as pictured above, operator has complete two-hand control, yet is fully protected when drill is running. Guard does not interfere with chuck adjustment, and can easily be removed as desired. This important feature is found on all the new Stanley Electric Drills shown below. See them at your dealer's or write for information to: Stanley Electric Tools, 414 Myrtle Street, New Britain, Connecticut.

NEW STANLEY ELECTRIC DRILLS. Plenty of surplus power for heavy-duty drilling. Available in all the standard voltages, A.C. or D.C. Two models.

DROP HANDLE
¼" size — No. 169
⅜" size — No. 161
½" size — No. 165

"D" HANDLE
¼" size — No. 168
⅜" size — No. 160
½" size — No. 163

STANLEY
Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

▼ BREVITY—Identify by IEN - 185 if you write the maker ▲▼

Small Component... or Complete Unit... You Can Count on getting whatever You need—Added evidence that

Everyone Can Count on VEEDER-ROOT

This REEL CONTROL BOX, complete with its *built-in* counting mechanism, indicates the number of feet of antenna reeled in and out of certain types of military aircraft. Manufactured completely by Veeder-Root, including outside bakelite cover and box, this unit shows another imaginative application of the universal language of direct-reading *Countrol*.

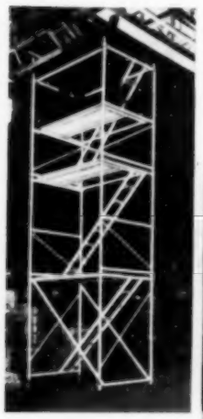
VEEDER-ROOT INCORPORATED
HARTFORD 2, CONN.

▼ BREVITY—Identify by IEN - 186 if you write the maker ▲▼

BUY MORE "TIME ON THE JOB" with these ALUMINUM SCAFFOLDS

On almost any maintenance or electrical job one of the things you must consider is "set-up" time . . . how long it takes your men to *get ready* to work.

That's where these Aluminum Sectional Ladder Scaffolds and Aluminum Sectional Rolling Scaffolds save you time and money . . . by cutting "set-up" time to the bone and giving your men more "time on the job".



Here's why:

- It's easy to carry the light component parts to the job area.
- Scaffolds go up faster because of prefabricated design and snap-on braces.
- Scaffold quickly adjusts to proper height.
- Easy-to-climb stairways help get your men on the job . . . fast.

These easy-to-handle Scaffolds save time in dismantling, too. Non-rusting aluminum requires minimum maintenance. Used by leading maintenance men and electricians.

Get all the facts! Write for free Bulletins PSS-20 and PSS-22.

LADDERS and SCAFFOLDS FOR ANY PURPOSE
Any Place—Any Time

Gas Mark LADDERS SCAFFOLDING

for Greater Safety...Efficiency...Economy

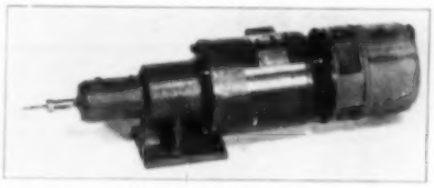
THE PATENT SCAFFOLDING CO., Inc.

38-21 12th Street DEPT. IEN Long Island City 1, N. Y.
WEST COAST PLANT: 6931 STANFORD AVE., LOS ANGELES, CALIF.
See Your Classified Telephone Directory for Nearest Office

▼ BREVITY—Identify by IEN - 188 if you write the maker ▲▼

THREADING . . Lead screw head, 1¼ in. stroke, rates to ⅜ inch

Source: PRECISION THREAD ENGINEERING CO.
2542 Park Ave., Detroit 1, Mich.



$550 with one lead screw

Class 4 threads can be produced consistently in open or blind-hole tapping with this new motor-driven head. The motor is spline connected to the spindle and at its rear is a magnetic brake to stop rotation the instant the circuit is opened. The spindle operates with a hardened and ground lead screw riding in a bronze lead nut so there is no drag on the tap in either forward or reverse direction.

The operator presses a start button to initiate the tapping cycle. The motor then drives the tap until a pre-determined forward point is reached where a reversing-limit switch is contacted. The motor then reverses, backing the tap out of the completed hole until a stop-limit switch is contacted. At this point the motor circuit is opened and rotation stops until the start button is pressed again.

Spindle speed is 825 or 1,650 rpm. Threading capacity is 0-80 to ⅝-in. 16. Standard assembly is for right-hand threads. The motor rates ¼ hp. for operation on 60-cycle 3-phase 220/440-volt ac. It is a ball-bearing two-speed unit guaranteed to operate satisfactorily on reversal as often as 30 per minute. Standard rotation is at 1,650 rpm. A motor for 825 rpm. can be specified. Lead screws and nuts for given threads are also subject to specifications.

▼ BREVITY—Identify by IEN - 189 if you write the maker ▲▼

TESTING . . Hydraulic stand for hose test, records the results

Source: SPRAGUE ENGINEERING & SALES CORP.
1142-46 W. 135th St., Gardena, Calif.

$10,000

Model S-221B is a new hydraulic test stand to check complete aircraft hose assemblies for cycle and impulse in accordance with Specifications MIL-H-5511 and MIL-H-5512. It also will make burst tests to 25,000 pounds. The stand is designed for laboratory use. It is not suited for production run testing.

Assembly is in a formed and welded steel cabinet with three compartments. They include the test chamber to the upper left, the electronic equipment to the upper right and the oil reservoir, pumps, motor and controls in the base. A choice of equipment is available to supply data on the impulse and surge patterns.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 190 if you write the maker ▲▼

the helmet that's Danger Proofed 4 Ways

. . . the protection that leaves nothing to chance!

IMPROVED McDonald SAND BLAST HELMET

FATIGUE-PROOF COMFORT! Made of extra tough duralumin to defy shock and abrasion—yet so light it insures wearing comfort hour after hour!
DUST-PROOF SEAL! New inner collar! New style cape! Harmful abrasives can't seep in! Special flexible wire ring clamps cape and inner collar snugly to helmet to seal dust out.
SHATTER-PROOF WINDOW! Larger, full vision window is made of dual shatter-proof abrasive resistant plastic — doubly protected by fine mesh guard! Controlled air distribution prevents fogging.
NEW BUMP-PROOF FLOW CONTROL VALVE! Can be set to any pressure — can't be jarred out of position. Assures positive pressure regulation; mounts conveniently to side of belt.

U. S. BUREAU OF MINES APPROVAL - 1927
Write for Full Information and Price

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

▼ BREVITY—Identify by IEN - 191 if you write the maker ▲▼

INDUSTRIAL INKS To Mark Anything!

Production engineers use "Clear Print" Wood Block Stamp Pads and Opaque Inks for the best clear, sharp, fast drying impressions. To cut down on lost shipments and rejected assemblies because of poor identification, use "Clear Print" for shipping room direction stamps and parts numbers. You are assured of permanently legible markings. Many bright visible colors available.

- For marking on non-porous materials such as:
- WOOD, METAL, GLASS, PLASTIC, RUBBER, PAPER AND MANY OTHERS

PHILLIPS PROCESS CO., INC.
192 MILL ST., ROCHESTER, 14, N. Y.

▼ BREVITY—Identify by IEN - 192 if you write the maker ▲▼

FEDERAL PRESSES

27 YEARS OF QUALITY CONSTRUCTION

BALANCED POWER

Built of finest materials, all working parts of Federal Presses are carefully machined, fitted and aligned to provide balanced power throughout their operating range. Choose Federals for your press room. Six to 80 tons. Also dial feeds. Write for catalog.

THE FEDERAL PRESS CO.
505 Division St., Elkhart, Ind.

▼ BREVITY—Identify by IEN - 193 if you write the maker ▲▼

MEET ALL SANITARY WASHING FACILITY REQUIREMENTS

36" Circular Bradley serves 5 to 6 persons simultaneously—each with a spray of clean tempered running water.

• The sanitary washing facilities provided by Bradley Washfountains have long been recognized by industry. The central sprayhead serves each person with fresh running water. There are no faucets to touch or maintain . . . no contaminating water collects in the bowl.

With Bradleys space is saved, and installation costs greatly reduced because there are only 3 piping connections (hot water, cold water and drain) for each multi-person Washfountain.

Catalog 4701 describes and illustrates all types. Copy free on request.

BRADLEY WASHFOUNTAIN CO.
2219 W. Michigan St.,
Milwaukee 1, Wisconsin

BRADLEY washfountains

Distributed through Plumbing Wholesalers

▼ BREVITY—Identify by IEN - 194 if you write the maker ▼

Surface PYROMETERS for every purpose

The routine use of CAMBRIDGE Surface Pyrometers takes the guesswork out of temperature determination in many industries. The CAMBRIDGE is accurate, dependable, rugged, quick-acting and easy to use. The Roll Model is for checking surface temperatures of still or moving rolls. The Needle Model is for insertion into materials in a plastic or semi-plastic state for within-the-mass temperature determination. The Mold Model is for checking surface temperatures of mold cavities and surfaces of almost any contour.

Send for Bulletin 1945A

CAMBRIDGE INSTRUMENT CO., INC.
3710 Grand Central Terminal
New York 17, N. Y.

CAMBRIDGE
PIONEER MANUFACTURERS OF
PRECISION INSTRUMENTS

Moisture Indicators and Recorders • Physical Testing Instruments
Surface Pyrometers • Laboratory Instruments for A. C. & D. C. • Galvanometers
Engineering Instruments • Gas Analysis Equipment • Physiological Instruments
and many other Mechanical and Electrical Instruments

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SEND FOR OUR NO. 830

It is a brand new 84-page book covering every phase of our electric vibrating equipment.

Jeffrey-Traylor electric vibrating Feeders, Conveyors, Coolers, Dryers, Packers, Screens, Weigh-Feeders, perform a multitude of operations . . . handle a wide variety of material. If it's control over tonnage handled, we can do it to perfection. Yes, *Instantaneous* and *Absolute Control* over the flow of material.

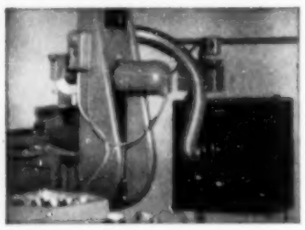
It is possible for the specific requirements of your plant or process to govern the operation of its equipment instead of having the limitations of uncontrolled feeding govern the entire operation. May we hear from you?

JEFFREY

ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 Fourth Street, Columbus 16, Ohio

▼ BREVITY—Identify by IEN - 196 if you write the maker ▼

STOP DUSTS



Instantly *with* DUSTKOP

Available from stock of 22 standard models
300 cfm to 10,000 cfm

for: Surface Grinders, Tool and Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost all kinds of industrial dusts.

Ask for Catalog 605-2. Describes dust problem for recommendation by return mail — no obligation.

AGET-DETROIT CO.
101 Main Street Ann Arbor, Michigan

▼ BREVITY—Identify by IEN - 197 if you write the maker ▼

ELEVATOR . . Portable hand lift rates 1,000 lb., is operated by a crank

Source: REVOLVATOR CO.
8704-8 Tonnelle Ave., North Bergen, N. J.

Uplifter is a new assembly in the company's line of portable elevators and lift trucks. It mounts a 24 by 24-in. platform, can be turned on the floor in a 41-in. radius. The lift table can be threaded to handle loads to 500 or to 1,000 pounds. Handle pressure on the crank for 1,000-lb. capacity is 17 pounds. Lift is a little over 1 in. for each crank turn. The unit weighs 415 pounds. It has 62-in. lift height. Overall height is 77 inches.

▼ BREVITY—Identify by IEN - 198 if you write the maker ▼

REFRIGERATING . . Sealed compressor and exchanger to produce cold water

Source: HEAT-X-CHANGER CO.
46 Peaceable Hill Road, Dept. IE, Brewster, N. Y.

No need for storage tank

Instantaneous cold-water supply is provided by this new self-contained combination of Servel Supermetic refrigerating unit and a cast-aluminum heat exchanger in which water and refrigerant tubes are cast into a solid aluminum block. The equipment is assembled in a rectangular housing measuring about 17 by 19 by 25 in., for nominal capacity of 10 gph., or 27 by 23 by 29 in. to supply 40 gph. cooled from about 80 to 45 deg. F.

Control is by a thermostat in the water line and by a capillary tube for the refrigerant. The complete unit is dehydrated, charged and sealed prior to shipment so installation involves connection only for the water inlet and outlet and for the electric power to the motor. Smallest two units in the line employ ⅙ and ⅓-hp. motors operating on 110 volt 60-cycle ac. The other two employ ¼ and 1-hp. motors for operation on 220 volt 60-cycle ac. power supply.

▼ BREVITY—Identify by IEN - 199 if you write the maker ▼

RELAY . . Single pole, single throw, contacts rate 50 amp. at 28 volt dc.

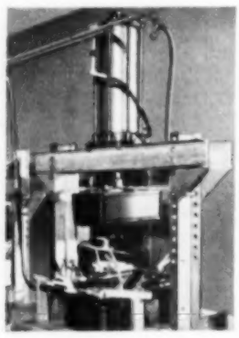
Source: ADVANCE ELECTRIC & RELAY CO.
2433-37 N. Naomi St., Burbank, Calif.

Flange mounting

Number B5X is a new single-pole, single-throw, normally-opened relay with double make-and-break contacts designed for continuous duty. It employs a solenoid coil available for specified operation between 3 and 230 volt dc. It will operate at minus 60 to plus 150 deg. F. The unit weighs 9¾ oz. and measures 1½ by 2⅞ by 1⅞ in. in overall dimensions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 200 if you write the maker ▼



"Never a Moment's Delay

...since first installed in 1945"

Regal Plastic Co., Kansas City, Mo., installed NOPAK Valves and Cylinders on a battery of presses used in draw-forming sheet plastics. They report that this NOPAK equipment "has never caused a moment's delay in production since first installed".

The chief requirements of this application are medium power combined with flexibility in set-up and in stroke length. Down-stroke, controlled at varying speeds, is followed by a *dwell* of 1 to 20 minutes and careful withdrawal of the punch from the finished part.

NOPAK Air-Cylinder Power has provided the required versatility in that set-ups can be changed quickly, and fast application or release of pressure is easily accomplished.

GALLAND-HENNING MFG. CO., 2760 S. 31st Street, Milwaukee 46, Wis.

Write for Bulletin SW-1, or refer to Sweet's File for Product Designers.

Representatives in Principal Cities

NOPAK
VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

▼ BREVITY—Identify by IEN - 201 if you write the maker ▼

New OVERHEAD CONVEYOR STEPS UP PRODUCTION! . . .

UN-O-VEYOR, is the first new chain invented in years . . . already a huge success in many installations all over the country . . . UN-O-VEYOR, the Universal Overhead Conveyor System with a universal-jointed flexible chain, offers one exclusive feature after another to increase efficiency, boost production, cut maintenance . . . yet is priced well within the budget of every plant operator.

Write for full details - no obligation

Michna **Systems**
5051 South Western Ave.
Chicago 9, Illinois

▼ BREVITY—Identify by IEN - 202 if you write the maker ▼

new, removable Kum-Kleen inspection stickers

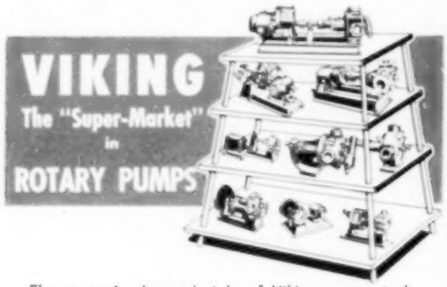
Hundreds of industrial plants have found these Kum-Kleen *Removable* Inspection Stickers are far faster, safer and more efficient than string tags, chalk marks, grease pencil, or gummed labels. These pressure-sensitive Kum-Kleen stickers are quickly applied *without moistening*, and they stick-and-stay-stuck to all clean, smooth surfaces, never curl or pop off, yet easily peel off when their job is done. In stock for immediate delivery or available printed to your specifications.

WRITE FOR SAMPLES
ADDRESS DEPT. IEN-1

AVERY ADHESIVE LABEL CORPORATION — Kum-Kleen

NEW YORK CITY: 117 Liberty St.
DETROIT: 3049 East Grand Boulevard
CLEVELAND: 2123 East 9th Street
PHILADELPHIA: Commercial Trust Building
CHICAGO: 608 South Dearborn Street
CINCINNATI: 628 Broadway Street
MONROVIA, California
Representatives In All Principal Cities

▼ BREVITY—Identify by IEN - 203 if you write the maker ▼



The range in size and style of Viking pumps truly parallels the range of items found in today's super-market.

When you specify Viking, there is no compromise. They fit the job at hand.

Nowhere else can this *complete line of rotary pumps* be duplicated. When your needs must be fully met, consult Viking for the answer. To start, ask for Folder 525F today.

VIKING — AN HONORED NAME IN PUMPING

See Our Catalog in SWEET'S

Viking PUMP COMPANY
Cedar Falls, Iowa

▼ BREVITY—Identify by IEN - 204 if you write the maker ■▼

MULTICLONE Collectors offer unusual advantages in compactness and adaptability to the space limitations of industrial plants. They save space four ways . . .

1. Greater Compactness: The MULTICLONE unit itself requires less space—as little as 1/6 the floor space of comparable equipment.

2. Maximum Flexibility: MULTICLONE inlet and outlet hook-ups are readily adaptable to meet individual requirements. Side-inlet side-outlet . . . side-inlet top-outlet . . . and even top-inlet side-outlet construction is available for fitting cramped spaces.

3. Simple Duct Requirements: In contrast to the complicated ducts of conventional cyclones, the MULTICLONE requires only one simple inlet and outlet duct. Saves headroom, saves space.

4. Fits Cramped Spaces: Even the shape of the MULTICLONE can be varied to meet specific space needs . . . long and narrow, square, or short and wide!

WESTERN Precipitation CORPORATION
ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & VAPORS
Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. La SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

Besides compactness there are many other MULTICLONE advantages. For further details send for descriptive MULTICLONE booklet!

▼ BREVITY—Identify by IEN - 205 if you write the maker ■▼

NEW MEAD INDUSTRIAL
AIR POWER CATALOG Ready!

Full of Suggestions for FASTER, CHEAPER PRODUCTION!

Illustrated, describes Air Cylinders, Valves, air operated Presses, Vises, Chucks, Hammers, Drill Press Feeds, Work Feeders, Timers, semi-automatic combinations, etc. *Pneumatic Cylinders.

Write for Complete Catalog!

MEAD SPECIALTIES COMPANY
4114 NO. KNOX AVE., DEPT. EA-12, CHICAGO 41, ILL.

▼ BREVITY—Identify by IEN - 206 if you write the maker ■▼

FREE Repair Handbook

40 PAGES
170 ILLUSTRATIONS

Here are a few of the many Smooth-On repairs for plant, shop, and home found in this pocket-sized handbook:

- Sealing cracks and leaks in pumps, heaters, apparatus, piping.
- Tightening loose parts of apparatus, fixtures, tools.
- Stopping leaks in basement walls.
- Repairing cracked concrete floors.

Write for your free copy of the Smooth-On repair handbook today. The simple directions and clear pictures will help you to make hundreds of time-saving, money-saving repairs.

ONE OF THE TEN SMOOTH-ON REPAIR CEMENTS

Smooth-On No. 1, used on iron, steel, brass and other metals, is a quick hardening repair cement that comes in 7 oz., 1, 5, 20, or 100 lb. sizes. If your supply house hasn't it write us.

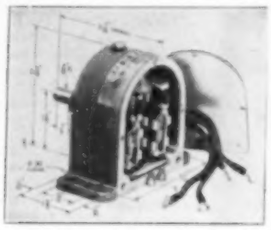
SMOOTH-ON SO.209

Smooth-On Mfg. Co., Dept. 1, 570 Communipaw Ave., Jersey City 4, N.J.
Please send me FREE Repair Handbook.
Name.....
Address.....
City..... State.....

▼ BREVITY—Identify by IEN - 207 if you write the maker ■▼

SWITCH . . Pivoted mercury unit, magnetically actuated by rotating disc

Source: WINTERBURN MFG. CO.
P. O. Box 386-A, Putnam, Conn



About $32 to $48

One or two mercury switches rating 6.5 amp. on 110-volt, 60-cycle ac. are mounted to pivot between closed and open positions in a compartment forming the front half of this new Danic switch. Enclosed in a second compartment at the rear are two discs mounted on ball bearings to rotate facing each other. This compartment is partially filled with hydraulic fluid. One disc is assembled on the drive shaft extending from the rear. The other disc carries permanent magnets that cause the mercury switches to pivot when the drive shaft is rotated and to return to normal position when rotation stops. Connection between the driving disc and the magnet disc is through the hydraulic fluid.

Several designs include one unit to open a pair of contacts as soon as the shaft starts rotating in either direction and to close them after the shaft has come to a complete stop. Another one will open the contacts as the shaft turns counter-clockwise, close them when the shaft stops, open a second pair of contacts if the shaft rotates in reverse direction and again close when the shaft stops. A third design will close and open the circuit on each revolution of the shaft. A fourth is a combination of start-stop in clockwise or counter-clockwise direction. A fifth is adjustable for cut-in and cut-out speed between 2 and 600 rpm.

▼ BREVITY—Identify by IEN - 208 if you write the maker ■▼

TRUCK . . Platform adaptor for company's Model W pallet truck

Source: TOWMOTOR CORP.
1224-28 E. 152nd St., Cleveland 10, Ohio

Latches to ride upright

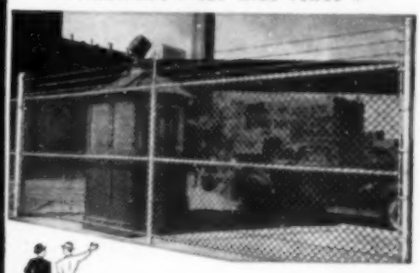
Structural frame has been designed to ride in horizontal position on the company's electric pallet truck to act as a load-carrying platform or to swing to upright position so the truck can be used to carry loaded pallets as it was originally intended. Height in lowered position when riding horizontally is 7 in. above the floor. When the truck's lift mechanism is operated it rises to 11 inches.

Width is 29 in. so the frame can be hinged upward to straddle the truck's storage battery which clears 27 in. for the standard lead-acid unit. Length ranges from 42 to 72 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 209 if you write the maker ■▼

PAGE FENCE - Since 1883
• AMERICA'S FIRST WIRE FENCE •



Defense against hazards which could hinder or stop production is a major function of Page Chain Link Fence, guardian of persons and property for more than 60 years. Consult the skilled Page Fence erecting firm near you, whose name we will send with fence data on request. Cost estimates, no obligation. For information:

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

▼ BREVITY—Identify by IEN - 210 if you write the maker ■▼

REDUCE HANDLING
of Tools, Parts and Materials

Because Stackbins are portable containers — not fixtures — tools, parts and materials can be carried to departments, from machine to machine, or held in stockrooms without being transferred from one container to another. Stored in Stackracks, any Stackbin is instantly accessible when its contents are needed—without disturbing any other bin. *Stackbins*—individual hopper-fronted stacking bins, slide like drawers in *Stackracks*—individual units which lock together to form racks of any size, shape or capacity.

STACKBINS IN STACKRACKS

Manufactured and sold in Canada exclusively by Wickwaro-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

▼ BREVITY—Identify by IEN - 211 if you write the maker ■▼

Welding lots of Different pieces or lots alike . . .

This Positioner Increases Production . . . Improves Welds Cuts Rod Waste

This universal table top makes the Worthington Welding Positioner as profitable on *job* work as in mass production.

Those "T" slots make the table adaptable to any shape of work piece and a wide range of sizes. No special jigs or fixtures needed.

Result—up to 50% more footage, better welds (using higher current and heavier rods), less welding rod waste.

Welding positioner capacities from 100 lbs to 30 tons. Also: turning rolls from 3 to 150 tons, stationary or self-propelled.

Write Worthington Pump and Machinery Corporation, Dunellen, New Jersey, for bulletins or additional information.

Y13

WORTHINGTON
WELDING POSITIONERS

▼ BREVITY—Identify by IEN - 212 if you write the maker ■▼

Can Straight-Chrome Stainless help you beat the nickel shortage?

Courtesy — Mercury Conveyor, Inc.

If you're seeking to beat the nickel shortage — this all-stainless food conveyor carries a useful suggestion. The manufacturer had long used nickel-bearing stainless steel to make a sanitary unit.

Recent nickel controls, however, curtailed production—and made substitute materials necessary. But there were shop and fabricating practices to consider—in addition to appearance, sanitation and service life of the final product.

Frasse Technical Service was called in — and after study, Frasse engineers recommended Type 430, a straight-chrome stainless. It met all requirements—was freely available from Frasse warehouse stock.

Why not look into the possibilities of this grade? Send for Frasse Engineering Memorandum #8 describing properties and fabricating procedures of Type 430—it's free.

Peter A. FRASSE and Co., Inc.
17 Grand Street, New York 13, N. Y.
Lyndhurst • Philadelphia • Buffalo • Syracuse

Call FRASSE 1st for Stainless Steels
Bars • Sheets • Strip • Plate
Pipe • Tube • Wire • Valves • Fittings

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Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, time-saving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. S 52.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

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GAST AIR PUMPS 3 TIMES APPROVED for Addressograph Products

FEEDING MATERIALS at high speed often poses problems. On this Addressograph offset press, for example, the feeder must deliver up to 7,000 sheets per hour.

SEND FOR OUR CATALOG ON SWEET'S FILE

HOW COULD THIS best be done? Tests showed that one Gast rotary-vane Air Pump would supply both pulseless vacuum and pressure for feeding paper. Gast Rotaries were then approved as standard on this and two more Addressograph Products.

Gast Application Ideas Booklet — showing 26 design problems solved — sent upon request.

COMPACT AND QUIET, they're most of all dependable. Vanes take up their own wear automatically — giving years of "like-new" performance. Service-free periods often exceed 3 years.

YOUR PRODUCT PROBLEM may be vastly different — yet "Air may be your Answer!" Write for detailed information.

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS (to 3600 R.P.M.) · COMPRESSORS (to 30 lbs.) · VACUUM PUMPS (to 28 inches)
GAST MANUFACTURING CORP., 119 Hinkley St., Benton Harbor, Mich.

▼ BREVITY—Identify by IEN - 215 If you write the maker ▲▼

COMPARE

it all adds up to this..

MODINE

is tops in unit heater values

Yes, on every count, leading architects and engineers agree — Modine Unit Heaters have everything!

Performance! Choose any Modine—Horizontal, Vertical or Power-Throw—and you get uniform comfort.

Economy! Fuel bills are smaller with Modine. And installation and maintenance costs are far lower, too.

Get all the facts from your Modine representative listed in your phone book classified section. Modine Mfg. Co., 1603 DeKoven Ave., Racine, Wis.

Ask for Bulletin 140A. Modine Unit Heating. Also available — bulletins covering special applications in commercial brooder houses, greenhouses, and milk houses.

U-1113

Modine UNIT HEATERS

FOR FACTORIES • STORES • GREENHOUSES • COMMERCIAL BROODER HOUSES • MANY OTHER APPLICATIONS

▼ BREVITY—Identify by IEN - 216 If you write the maker ▲▼

COUNTING . . Wheel type unit, step motor drive, to 100 counts per sec.

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Reset type register

Count register and direct-connected step motor are mounted on the front of a housing that encloses an electronic power supply in this new impulse counter. The unit operates with complete accuracy at rates to 60 cps. for either random or continuous counting.

Count input can be by pulses in a range between 6 and 15 volts, by operation of contacts or by the output of a photoelectric pre-amplifier. The power supply consists of a thyratron "flip-flop" circuit, an input amplifier and a high-voltage source capable of providing the power requirements of a phototube pre-amplifier. Operation is on 110-volt 60-cycle ac.

Weight of the assembly is about 12 pounds. Overall dimensions of the metal enclosure are 11 by 7 by 13 inches. The step motor and register measure 5⅛ by 3 by 3¼ inches.

▼ BREVITY—Identify by IEN - 217 If you write the maker ▲▼

WOOD WORKING . . Chain saw, 3½ hp. engine, 20 to 40 in. rail

Source: HENRY DISSTON & SONS INC.
49 Tacony St., Philadelphia 35, Pa.

It's a "hungry" chain

Model DO-101 is a new assembly in the company's line of chain saws. A new chain is employed that is effective on all types of wood. This chain mounts comparatively small teeth with a low cutting edge, short pitch and rounded guiding lugs that regulate the depth of cut. A characteristic of the chain is the fact that it can be sharpened quickly with single file strokes. Its tooth form is sufficiently long for extended life in service after repeated sharpenings. The saw can be nosed directly into a log and the power head rotated around the log circumference to complete a cut of greater diameter than the length of the rail.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
See the product index inside the back cover

▼ BREVITY—Identify by IEN - 218 If you write the maker ▲▼

RAMSCO

FREE TURNING

BALL BEARING SWIVEL FITTINGS

FOR LIQUIDS, GASES, STEAM, AND OTHER CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION SERVICE.

360° FREE ROTATION—1, 2 AND 3 PLANES

Your particular piping problems solved. You name it—we have it. Over 500 sizes, types, styles. Sizes: ¼" to 14" low pressure; ¼" to 6" high pressure. Corrosive service or steam fittings 1000 psi. and temp. to 750°F., asbestos or Teflon packed. Low pressure fitting to 1000 psi. and temp. to 225° F. High pressure fittings to 15,000 psi. and temp. to 225° F. Gear driven types available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at left, threaded, flanged or weld ends.

RASMUSSEN MFG. CO.
12305 INDUSTRIAL AVENUE
HOLLYDALE, CALIFORNIA

RAMSCO

▼ BREVITY—Identify by IEN - 219 If you write the maker ▲▼

TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants.

How it works to—

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

All described in Folder A-510 IEN

Complete control of your tools will save headaches in the months ahead.

Write for your copy today to:

THE McCASKEY REGISTER COMPANY • ALLIANCE, OHIO

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

▼ BREVITY—Identify by IEN - 220 If you write the maker ▲▼

"HOLD EVERYTHING"

with this strong, open-side, all-purpose handy vise.

Takes work from 3 sides
Range from 2⅜" to 8⅝"
Positive non-slip grip

Ideal for valves, manifold fittings and all other hard-to-hold items.

● Heavy, one-piece malleable cast-iron body is virtually indestructible. Takes work from 3 sides. Four easily replaceable dies in lower jaw provide positive grip to hold work safely in balanced non-slipping position. Easily installed non-scarring soft jaws also available. Vise screw made of toughest steel has coarse Acme thread for rapid adjustment. Counterbalanced handle, mounted at efficient arm height, can be quickly extended for extra leverage. Wide range replaces three ordinary vises. Far safer and faster than chain tongs. For folder and prices address . . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX, LOS ANGELES 54, CALIFORNIA

▼ BREVITY—Identify by IEN - 221 If you write the maker ▲▼

NEW COLORED SEAL

LASTS LONGER BECAUSE IT PENETRATES DEEPER

Colored Newvar lasts as long as surface layers of concrete because it penetrates deeply into the pores. Forms a tough, smooth, colorful surface that prevents crumbling and dusting. Colored Newvar is water proof, dust proof, impervious to oil, grease, gasoline, naphtha, kerosene, etc.

Beautify Floors Overnight!

Brush or mop Colored Newvar over clean floors at night . . . ready for use in the morning. One coat seals and protects, two coats preserve and finish your floors.

Colored Newvar in Red and Gray

SEND FOR FULL INFORMATION TODAY!

THE **PENETONE** CO.
BOX IEN-152 TENAFLY, N. J.

▼ BREVITY—Identify by IEN - 222 If you write the maker ▼

Here's the right iron for EXTRA HEAVY DUTY SOLDERING

Super-powered at 700 WATTS!

The ideal Iron for heavy soldering and large branders. 700 watts with tip 1¼ inches in diameter. Heavy duty construction from tip to cord terminal. Rugged long-life heating element with case made from solid hexagonal steel for extra strength. Operates on any cycle AC or DC current; Furnished for either 110 or 220 volts.

HEXACON MODEL 700 $30.00

An Iron for Every Soldering and Branding Need

There is a quality made Hexacon Iron for every use in manufacturing or repair work. Hexacon irons include screw tip, plug tip and hatchet types with tip diameters from ⅛" to 1¼"—from 40 to 700 watts. Write for illustrated catalog.

HEXACON

HEXACON ELECTRIC COMPANY
133 WEST CLAY AVE. • ROSELLE PARK, NEW JERSEY

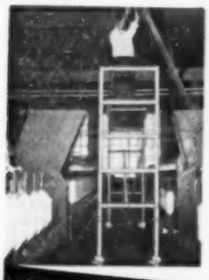
▼ BREVITY—Identify by IEN - 223 If you write the maker ▼

SAVE up to 70% with Aluminum Alloy "UP-RIGHT" SCAFFOLDS

NEW, FASTER, SAFER WAY TO GET UP IN THE AIR & ROLL WITH THE JOB

30' Mobile
TOWER SCAFFOLD
which took only 10 minutes to erect. A tower of any other height desired can be erected by using the required number of standard 6' or shorter sections. Each one-piece section is easily handled by one man.

Mobile 6', 8' or 10'
SPAN SCAFFOLDS
"The only way to get over looms and spinning frames," reports textile plant manager. Ideal for narrow aisles and cluttered areas in any factory.



ROLL-AROUND and SAFETY CAGE
Provides new, faster method for covering entire wall areas of tanks. Can be rigged by one man. Roll-Around is anchored to eye-bolt on top of tank. Safety cage is raised or lowered while rolling around.

WRITE FOR DESCRIPTIVE CIRCULAR

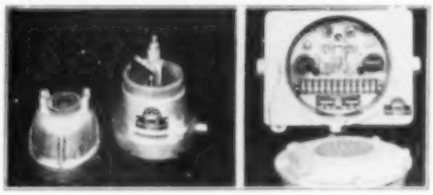
"UPRIGHT" SCAFFOLDS
DEPT. 142 • 1013 PARDEE ST. • BERKELEY, CALIF.
FACTORIES: BERKELEY, CALIF. • TETERBORO, N. J.

• OFFICES IN ALL PRINCIPAL CITIES •

▼ BREVITY—Identify by IEN - 225 If you write the maker ▼

CONTROL . . Transmitter and relay to regulate materials or liquid level

Source: AUTOMATIC TEMPERATURE CONTROL CO
5212 Pulaski Ave., Philadelphia 44, Pa.



Sensitive to one inch of water

New transmitter, designed for a pressure range of 0 to 600 lb., employs a differential transformer with its armature connected to a diaphragm as the actuating element for indication and for control of materials or liquid level in a bin or tank. An inert-gas supply line brings pressure to the transmitter slightly higher than that in the tank so pressure on the top and bottom of the diaphragm is equal as long as the diaphragm is not submerged. When it does become submerged the unbalanced weight displaces the transformer armature establishing a current that actuates the relay element. The relay, in turn, closes or opens an indicator or control circuit to light a pilot lamp on a remote panel board or to initiate corrective action.

A typical installation in storing and handling catalyst employs four of the transmitters at various levels and an indicator-light panel located at some distance away.

▼ BREVITY—Identify by IEN - 226 If you write the maker ▼

GAGE . . Optical comparator, 10X to 100X, mounts 16 by 20 in. screen

Source: PORTMAN INSTRUMENT CO.
10 Manhasset Ave., Port Washington, N. Y.

Features sharp definition

Super-Light condenser lens unit with power cooling, a new staging assembly in which the stage and work piece can be moved to one side to assist in change-over of lens units, the new Ciptar-Scope optical mechanism characterize construction in this new Model C-100 Century Optical Comparator. Focal length averages a little over 3 inches. The screen image is oriented with respect to the position and movement of the projected part. Seven stages of magnification, between 10X and 100X, are available as standard equipment for the new unit.

Drafting instruments and vernier protractors for direct tracing and measurement of projected images from a straight-edge guide bar can be used on the 16 by 20-in. sight line screen. The stage assembly is adjustable by built-in control for helix-angle positioning. The entire stage can be removed to mount special production-type fixtures directly to the stage-carrier base. Rigid construction in the housing assures permanent alignment in service. Overall dimensions are about 23 by 35 by 64 inches. Weight is 350 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 227 If you write the maker ▼

NEW PERMANENT NON-SLIP

FIRM-GRIP *Genuine* NEOPRENE LATEX **GLOVES**

✔ **Permanent** NON-SLIP on all 5 Fingers and Palm
Highly efficient embossed surface is *integral part* of glove
✔ **Impregnable** to ACIDS, CAUSTICS, OILS
✔ **Curved** FINGERS for Comfort and Easy Use

No. 5740-S LONG GAUNTLET
Length 14". Gauge .030 to .040
Sizes 9, 10, 10½, 11, 12

No. 5720-S LIGHT DUTY
Length 10½". Gauge .017 to .020
Sizes 7, 7½, 8, 8½, 9, 9½, 10, 11

★ Write for sample and prices

SEIBERLING LATEX PRODUCTS CO.
AKRON 9, OHIO

200-5th Ave., New York
Merchandise Mart, Chicago

▼ BREVITY—Identify by IEN - 228 If you write the maker ▼

helpful HYDRAULIC PRESS catalog

75 STANDARD MODELS

Keep it in your machine tool file. Hannifin Standardized Hydraulic Presses Catalog contains complete descriptions and specifications on Hannifin Forcing Presses, Straightening Presses, Column-Type Presses. Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.

do ALL you CAN do . . . with

HANNIFIN

Air Cylinders • Hydraulic Cylinders • Hydraulic Presses
Pneumatic Presses • Hydraulic Riveters • Air Control Valves

▼ BREVITY—Identify by IEN - 229 If you write the maker ▼

BE READY FOR *Every* CLEANING NEED

IDEAL BLO-R-VAC

Power-packed and with highest cleaning efficiency, IDEAL Blo-R-Vac speeds *all* your cleaning jobs! Low in first cost, it's actually *three rugged cleaners in one!* Vacuums lint, dirt, picks up water. Promotes scrap salvage — metal particles stay in big tank; lighter particles go into dust-tight bag. Power unit serves as a separate blower-sprayer or hand type cleaner. Full selection of attachments. 1½ or ⅜ H.P.

Triple Value!
A "Tank-Type" Cleaner
A "Hand-Type" Cleaner
A Blower-Sprayer

All in One!

CONVERTS IN A JIFFY! . . . from a "tank-type" cleaner to a "hand-type" cleaner or blower.

Sold Through America's Leading Distributors
Canadian Distributor: Irving Smith, Ltd., Montreal

TRY IT FREE!

IDEAL INDUSTRIES, INC.
1108 Park Ave., Sycamore, Illinois
Arrange FREE DEMONSTRATION of your new BLO-R-VAC in our plant.
Name _____
Company _____
Address _____
City _____ Zone _____ State _____

▼ BREVITY—Identify by IEN - 230 If you write the maker ▼

Portable Cord and Cable Grips

Cord and cable grips for portable wiring offer a complete line of substantially built fittings for heavy duty service. The standard types shown have aluminum body, aluminum compression nut, and single hole rubber grommet. Two and three hole grommets can also be furnished.

Angle types are available; also female bodies with or without chase nipples; also with serrated body for mounting in sheet metal panels or cabinets.

Compression nuts with split clamp, with hose attachment, with extended handle, or with cord protecting spring are available. Couplings for flexible conduit can be supplied.

Consult your Pylet Catalog 1100 for complete listings.

THE PYLE-NATIONAL COMPANY
1346 NORTH KOSTNER AVENUE CHICAGO 51, ILLINOIS

District Offices and Representatives in Principal Cities of the United States.

PLUGS AND RECEPTACLES • PYLET CONDUIT FITTINGS

▼ BREVITY—Identify by IEN - 231 If you write the maker ▼

FOR HARD SERVICE

Use SARCO inverted bucket STEAM TRAPS

Simplest construction; minimum maintenance cost; largest capacity; longest life. Since 1936 furnished with built-in strainer in all sizes, ½" to 2". Pressures to 900 psi. Catalog 151

On Laundry Presses

524

SARCO SARCO COMPANY, INC. Empire State Bldg., New York 1, N.Y. SAVES STEAM SARCO CANADA, LTD., TORONTO 5, ONTARIO

▼ BREVITY—Identify by IEN - 232 If you write the maker ▼

The DRY SCRUBBER with the *Self-Sharpening* BRUSH FEATURE

Just flip the switch! That reverses the motion of the brushes of the *Finnell* Dry Scrubber and re-sharpens them automatically. Eliminates the need for frequent changing of brushes by hand in order to maintain a good cutting edge. This heavy duty *Finnell* cleans grease-caked floors in about *one-tenth* the man-hour time required when hand-spudding, and is far more thorough. Floating brush rings enable the two powerful scarifying brushes to get into indentations and grooves that rigid coupling brushes pass over and miss. The machine is adaptable to wet scrubbing, steel-wooling, waxing, and polishing. For free floor survey, consultation, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 2601 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC. Pioneers and Specialists in FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES — BRANCHES IN ALL PRINCIPAL CITIES

▼ BREVITY—Identify by IEN - 233 If you write the maker ▼

TM *Alloy Steel* CHAINS

DO MORE WORK, LAST LONGER, COST LESS than wrought iron types!

Your chain problems are substantially reduced with TM Alloy Steel Chain. Records prove it *outlasts* and *outperforms* wrought iron types. It's more economical too!

TM Alloy Steel Chain has twice the tensile strength. Controlled heat-treatment assures a uniform hardness of from 265 to 285 Brinell. Highly resistant to abrasion, cold-working, grain-growth and shock at all temperatures.

THE MARK OF QUALITY This Registration Ring bears the serial number and safe working load.

Send for free booklet containing all the facts and specifications on famous TM Alloy Steel Chain.

TAYLOR MADE A GREAT NAME IN *Chain* SINCE 1873

S. G. TAYLOR CHAIN COMPANY Dept. 4, Hammond, Indiana
Rush literature and prices on TM Alloy Steel Chains.
Name
Address

▼ BREVITY—Identify by IEN - 234 If you write the maker ▼

SEPARATING . . Coil and filter to dry and to clean compressed air

Source: HANKISON CORP.
282-A Renton Bldg., Pittsburgh 33, Pa.

Condensaffilter Model B is a new combination of cooling coil and a cartridge type filter element to apply in a compressed-air line. A single unit measures 9 in. in diameter by 15 in. in height, rates 30 cfm. at 100 pounds. It is particularly suited to dry and to remove foreign matter from compressed air for combustion, in operation of pneumatic tools, spray equipment, sand blast equipment and laboratory apparatus as well as for mixing operation in food and chemical processing and in electroplating.

Compressed air is connected in the side of the housing to fill the chamber surrounding the filter and its cooling coil. Cooling-water inlet and outlet are connected at the bottom into the coil. Connection is made also to a discharge trap from the bottom of the housing. The air surrounds the coil and is cooled prior to moving upward through the annular space between coil and housing to turn down into the filter. This part of the assembly provides about 4 sq. ft. of filtering area made up of five hexagonal filter chambers in parallel each wrapped with seven layers of canton flannel. Provision is made for removal of the filter element so it can be cleaned by immersion in a suitable solvent. Clean dry air issues from the pipe connection at the center of the housing top.

▼ BREVITY—Identify by IEN - 235 If you write the maker ▼

STORING . . Desiccant container for indicator cards and silica gel

Source: D. C. COOPER CO.
1465-69 S. Michigan Ave., Chicago 5, Ill.

"Keep your powder dry"

Bags containing silica gel in quantities from 5 gm. to 5 lb. can be stored in compartments in each of four sections of this new portable Model PDC-39 desiccant container. They are held in storage in dry sealed condition until they are to be used for moisture - absorption purposes. There is also provision to store a supply of humidity-indicator cards for use with the bags of desiccant.

Each section in the assembly is equipped with an air-tight hinged lid, marine lock and hygrometer. A master lock is provided to secure all of the sections as a unit. Each section contains ten compartments. Overall inside dimensions are 45 by 30 by 24 inches. Side work shelves are detachable.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 236 If you write the maker ▼

How to Save Time and Money On Hog Ring Fastening

Use this improved self-feeding Bostitch P7 Hog Ring Plier to:

- fasten fabric to wire frames
- join loose wires into neat assemblies
- bind ends of ropes, cords, wires
- seal twisted necks of plastic bags

Bostitch P7 hog-ring-type staplers are stronger, more powerful than ever. One-hand operation easily forms sturdy staples into "hog rings." Staples have ⅛" openings . . . can be compressed to rings with a ¼" diameter. Rings resist about a 20-pound pull without opening. Bostitch P7 stapling pliers are first choice of automobile seat cover installers, mattress makers. You'll find them quicker and easier than tying, winding, wrapping, wiring, taping. Write for PTG232 data sheet for more details on this time-saving, cost-cutting method. BOSTITCH, 452 Mechanic St., Westerly, R. I.

BOSTITCH fastens it better and faster with wire — ALL TYPES OF MACHINES FOR APPLYING STAPLES — ALL TYPES OF STAPLES APPLIED BY MACHINES

▼ BREVITY—Identify by IEN - 237 If you write the maker ▼

Precision Equipment for Your Defense Jobs . . .

During World War II thousands of EXACT WEIGHT Scales were used by industry in general for precision weighing in hundreds of metal working operations. These operations, to mention but a few, covered selection of mass produced parts, counting of parts, balancing and final inspection. Other large operations were for immediate future do this now. Advise us promptly what your operation is and give us as full details as possible. Many of these operations call for (1) special work on our part (2) getting scarce materials, both of which can seriously delay this vital equipment when you need it most.

EXACT WEIGHT SCALES *Industrial Precision*

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

▼ BREVITY—Identify by IEN - 238 If you write the maker ▼

DRILL CONCRETE 70% *Faster with* TILDEN ROTARY KONKRETE KORE DRILLS

Why? *Only Tilden has this patented slot . . . expels cuttings automatically!*

- Diameters 3/16" to 4" in stock
- Diameters above 4" made to order
- Interchangeable shanks up to 5 feet
- ½" to 1" drills cut up to 6' per min.
- Drills 200' before resharpening (including embedded steel, glass, rock)
- Free factory sharpening service
- Use with any electric or air drill
- Quiet operation - no hammer

Write for FREE CATALOG today!

Tilden Rotary Konkrete Kore Drills are standard equipment with utilities, municipalities and thousands of contractors. Used by the U. S. Navy, Air Force and C. A. A.

TILDEN TOOL MANUFACTURING COMPANY
209 Las Malinas • San Clemente, Calif.
BRANCH OFFICE: 1344 W. Washington Blvd • Chicago 7, Ill.

SOLD BY BETTER SUPP.. HOUSES EVERYWHERE

▼ BREVITY—Identify by IEN - 239 If you write the maker ▼

Acme Offers Complete Facilities for

PRECISION GRINDING

FAST SERVICE . . . LOW COST

- INTERNAL
- EXTERNAL
- CRUSH FORM
- CENTERLESS
- TWIN DISC
- SURFACE
- THREAD

Acme is equipped to handle all types of precision grinding. Expert craftsmen, using newest methods and modern equipment, will do the job for you faster, better, more economically. Acme also offers a flat lapping service that can finish surfaces to within millionths. Write for details.

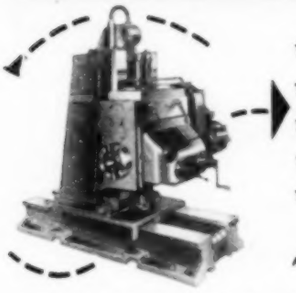
Acme Industrial Company
Makers of Standardized Jig & Fixture Bushings
216 N. Laflin Street • Chicago 7, Illinois

THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

▼ BREVITY—Identify by IEN - 240 if you write the maker ▼

FORNEY

BORING and FACING MACHINE



★ Boring
★ Facing
★ Milling
★ Tapping
★ Drilling

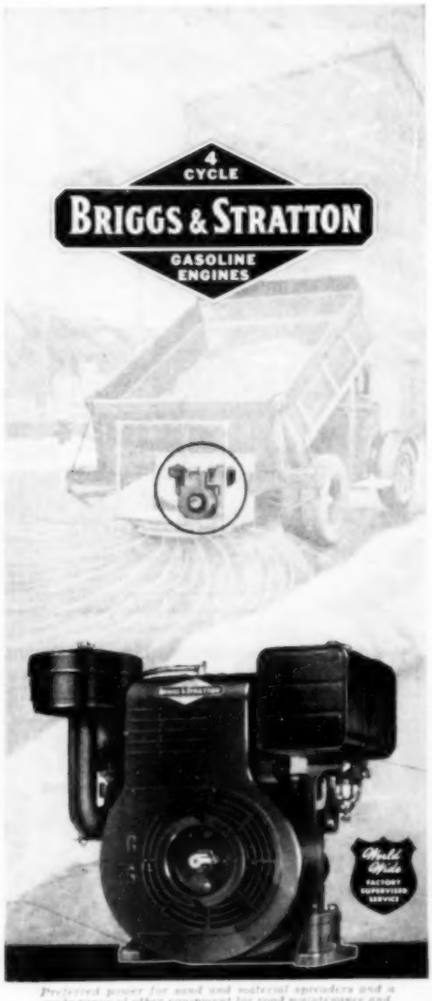
WRITE FOR NEW BULLETIN

Designed to eliminate conventional overhang for necessary bar travel providing greater resistance to bending stresses when boring—greater rigidity when milling—increased capacity when facing. Numerous applications can be made in boring, facing, drilling, tapping and milling. Duplicator attachments available. Standard model weighs 10,000 pounds.

FORNEY'S INCORPORATED
Manufacturers of Special Machinery Since 1910
ELM ST NEW CASTLE, PENNSYLVANIA

▼ BREVITY—Identify by IEN - 241 if you write the maker ▼

4 CYCLE
BRIGGS & STRATTON
GASOLINE ENGINES



Preferred power for sand and material spreaders and a wide range of other equipment for road maintenance and construction — the world's most widely used single-cylinder gasoline engine on machines, tools, appliances used by industry, railroads, oil fields, and on equipment for farm and home.

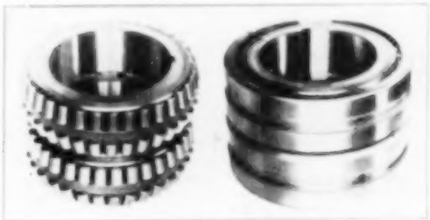
BRIGGS & STRATTON is the world's largest builder — more than 30 years of continuous production — of single-cylinder, 4-cycle, air-cooled gasoline engines.
Briggs & Stratton Corporation,
Milwaukee 1, Wisconsin, U. S. A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

▼ BREVITY—Identify by IEN - 243 if you write the maker ▼

BEARING . . Tapered roll design, single and multiple row, 2 to 20 inches

Source: TYSON BEARING CORP.
1320-24 Oberlin Road, Massillon, Ohio



Detailed in Engineering Journal

New sizes have been added to the company's line of full-roll tapered-roller bearings for use in heavy-duty equipment. Single-row assemblies are made in sizes from 2 to 20 in. od. with two-row bearings from 4 to 20 in. and four-row bearings from 6 to 20 inches.

The four-row assembly illustrated measures 10¼ in. id., 15¾ in. od. and 10 in. in width. It is made of chrome-nickel steel. It has 126,000-lb radial capacity and 24,250-lb. thrust capacity at 500 rpm.

Deflection in cone and cup members is minimized by the close spacing of the tapered rolls. Positive alignment is assured by contact between the rolls and a rib which is an integral part of the bearing cone.

▼ BREVITY—Identify by IEN - 244 if you write the maker ▼

HANDLING . . Motor driven cradle takes steel coils for feed to a machine

Source: ROWE MACHINERY & MFG. CO.
1508 N. Industrial Blvd., Dallas, Texas

Coil rolls into place

Strip coils, weighing to 1½ ton and measuring to 15 in. in width by 48 in. in outside diameter, can be handled by this new Series-3000 motor-driven cradle. The actuating arm reaching across the front of the assembly is swung out of the way for loading and then is returned to control position on either the inside or the outside of the slack loop that is set up when the driving motor operates. Following initial set-up, this arm controls the feed action without need for operator attention.

Friction free operation is assisted by including rolls in the two side guide plates so the coil can ride against them and not actually contact the plates. The load-supporting and drive shafts are mounted in anti-friction bearings. The driving motor is connected through a reversing switch on the housing side. Overall dimensions of the assembly shown are 25¼ by 45 by 33 inches. Shipping weight is 740 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 245 if you write the maker ▼

cost cutters

Your accounting department can tell the difference . . . when GEROTOR pumps go to work in your plant! Unique GEROTOR design permits low relative speeds . . . results in less slippage, less wear, less downtime, longer life. Makes any machine a more efficient machine.

GEROTOR hydraulic pumps are precision-engineered for pressures up to 1000 p.s.i. continuous duty; in some sizes up to 1200 p.s.i. continuous, 1500 intermittent. Deliveries range from .4 to 40 g.p.m.

hydraulic pumps by GEROTOR

GEROTOR MAY CORPORATION, P. O. BOX 86, BALTIMORE 3, MARYLAND

▼ BREVITY—Identify by IEN - 246 if you write the maker ▼

HEAVY DUTY INDUSTRIAL TRAILERS

Standard or Special CAPACITIES TO 60,000 lbs.

A-620 Low deck, 5th wheel steer trailer

A-443 Die handling trailer

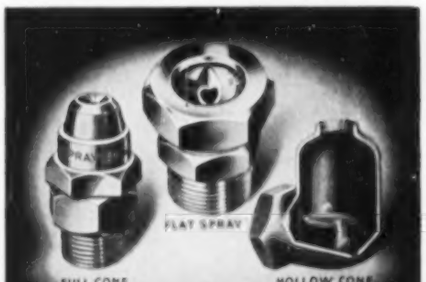
A-520
Medium height, 5th wheel steer trailer.

MERCURY

In addition to the standard "Type A-310" castor steer trailer, MERCURY offers a complete line of heavy duty trailers in castor steer, fifth wheel steer or four wheel steer designs in capacities to 60,000 lbs. As the world's largest producer of industrial trailers, Mercury is well equipped to fill your specific requirements. For complete information request Bulletins A-100 and A-999.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street, Chicago 9, Ill.

▼ BREVITY—Identify by IEN - 247 if you write the maker ▼



SPRACO NOZZLES

Write for NOZZLE CATALOG to
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS

▼ BREVITY—Identify by IEN - 248 if you write the maker ▼

POWER ADVANTAGE in the Top Bracket Power Range...V-Type 4-Cylinder WISCONSIN Air-Cooled ENGINES, 15 to 30 hp.

These 4-cylinder, V-type Wisconsin Engines meet every heavy-duty power requirement. V-type design assures not only the smoothest power delivery but also represents substantial reductions in engine weight as well as extreme compactness . . . at no sacrifice of rugged construction.

CONDENSED SPECIFICATIONS

MODELS		VE4	VF4	VF4D
Bore	inches	3	3½	3½
Stroke	inches	3½	3½	4
Displ. cubic inches		91.9	107.7	154
H.P. and R.P.M. range		15 at 1600	17.5 at 1600	26.8 at 1600
		21.5 at 2400	25 at 2400	31 at 2200
Net weight in lbs., Standard Engine		295	295	410

Our engineering department will gladly cooperate with you in adapting Wisconsin Engines to your requirements. Write for detailed data and the name of the nearest Wisconsin distributor.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

▼ BREVITY—Identify by IEN - 249 if you write the maker ▼

New DUMORE AUTOMATIC DRILL HEAD

Cuts costs 6 ways on small-hole drilling

Here is the most revolutionary production tool ever offered to the small-drill user — a compact, completely automatic drill head with self-contained air, controlled feed and speed, and extreme flexibility of set-up.

Because it operates at, but never over, optimum capacity of the drill, it gives you maximum production with minimum drill breakage — drill savings alone pay for the tool in short order on the majority of installations.

See the New Automatic Drill Head at your Dumore Distributor or write today for free 16-pg. bulletin.

Check these exclusive features
- ✓ More Holes per Minute
- ✓ Less Drill Breakage
- ✓ Less Scrap Loss
- ✓ Fast Set-up
- ✓ Self-Contained Air
- ✓ Lower Labor Costs

The DUMORE Company
1300 17th St., RACINE, WISCONSIN
Export address: 13 E. 40th St., New York, N.Y., U.S.A.

▼ BREVITY—Identify by IEN - 250 if you write the maker ▼

MODERN TIME AND COST SAVERS BUILT BY... Standard GRAVITY & POWER CONVEYORS

LIFT OR LOWER— FLOOR TO FLOOR WITH A

STANDARD INCLINEBELT

Move boxes, cases, cartons, sacks or bundles from basement to first floor, or any floor to floor — continuously with the Standard Inclinebelt. Compact — simple to install — minimum maintenance and attention. Lifts or lowers 10 to 20 lbs. of live load per ft.; floor elevations of 8 ft. to 14 ft. 6 inches inclusive; two belt widths to handle commodities 15½ inches to 25½ inches wide. Electric motor operated. Write for INCLINEBELT Bulletin — address Dept. IEN-12.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

▼ BREVITY—Identify by IEN - 251 if you write the maker ▼

INCREASES TAP LIFE by Guided Accuracy

Quickly pays for itself on small-lot tapping operations. Insures accurately tapped holes, increases work output—practically eliminates tap breakage and removal. Has slotted base for fixtures. Special steel machined parts. Long spindle bearing provides accurate alignment and long life. Four hardened collets, furnished, handles standard tap shank sizes from No. 0 through ¼". Either right or left hand taps may be used. Finished in machine-tool gray. Write for circular.

$20.50 POSTPAID

H. D. HERDER TOOL SPECIALTIES
3734 E. MICHIGAN AVE.
KALAMAZOO, MICH.

NEWS NOTES

Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, slide films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

▼ BREVITY—Identify by IEN - 252 if you write the maker ▼

CALENDAR . . By months for 1952 includes sewing machine data and pretty girls

Union Special Machine Co.
443-47 N. Franklin St., Chicago 10, Ill.

Decorative pictures of pretty girls in sewn textile products dress up each monthly page in the company's 1952 calendar, available upon request. Between pages are presented information on the company's industrial sewing machines, suggestions on attachments, lubrication recommendations.

▼ BREVITY—Identify by IEN - 253 if you write the maker ▼

CASTINGS . . How to weld them described in new 40-page instruction manual

Steel Founders' Society of America
920-A Midland Bldg., Cleveland 15, Ohio

Welding methods, electrodes, procedures are principal topics in new manual, "Recommended Practice for the Welding of Steel Castings." List price per copy is 35 cents. Subjects include preparation for welding, effects of welding, deposition techniques, electrode selection, welding instructions.

▼ BREVITY—Identify by IEN - 254 if you write the maker ▼

COMMUNICATING . . Uses for recording tape in industrial plants described in new 16-page booklet

Minnesota Mining & Mfg. Co.
902 Fauquier St., St. Paul 6, Minn.

Temporary records, time and motion studies, verbal instructions, labor-management meetings, are some of the illustrated uses for "Scotch" sound-recording tape in new booklet, "Sound Ideas for Business and Industry."

▼ BREVITY—Identify by IEN - 255 if you write the maker ▼

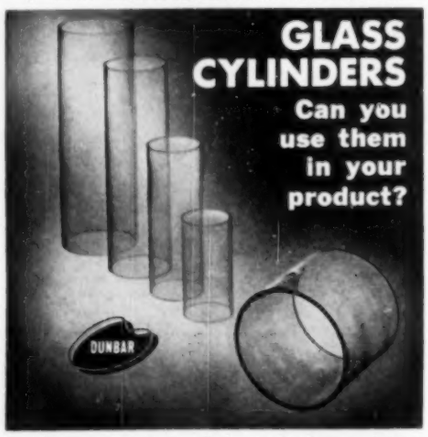
CONTROLS . . Schematic drawings in catalog show applications of pH and conductivity controls

Minneapolis-Honeywell Regulator Co.
4456 Wayne Ave., Philadelphia 44, Pa.

Feature of new 40-page Catalog 15-16 is a group of schematic line drawings on uses of Brown Instruments' pH and conductivity recorders and controls. They cover a spread from treatment of waste pickle liquor in steel making to wool carbonizing in the textile industry. Other similar drawings are employed to illustrate measuring methods.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 256 if you write the maker ▼



GLASS CYLINDERS
Can you use them in your product?

For dispensers, merchandise displays, visible hoppers, lighting fixtures, sight feeders, meters, columns or any other applications, DUNBAR offers you a wide variety of cylinder sizes in economical quantities. Or we will fabricate blown glass cylinders to your specifications. We invite your inquiries. Write Dept. 969 for our Glass Cylinder catalog No. C-51.

Dunbar Glass Corporation
DUNBAR, WEST VIRGINIA
NEW YORK • CHICAGO • LOS ANGELES

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FOOT CONTROL varies WELDING HEAT!

Patent No. 2308199

Mullenbach ARCTROL

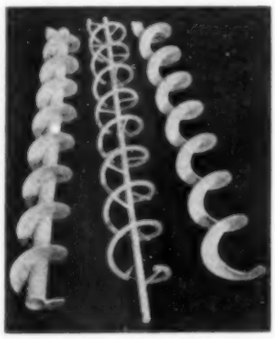
Unusual control on precision welding • Gives full-scale, remote control • Instant variations without breaking arc • Saves trips to the welder • Eliminates cratering • Gives hot starts • Increases welding speed • Regular welder operation and range unaffected.

Available for most makes of D.C. welders. Write for information giving welder name and model number.

MULLENBACH Electrical MANUFACTURING COMPANY
2300 EAST 27th STREET LOS ANGELES 58, CALIFORNIA

▼ BREVITY—Identify by IEN - 258 if you write the maker ▼

WORMS AND SPIRALS
to bore, convey, extrude, feed, process



Let us make them for you to your specifications or supply them from stock in standard designs immediately

Send your blueprints for quotation

JAMES EAGEN & SONS
WEST WYOMING, PA.

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Unit "UTILITY" HOIST
HYDRAULICALLY OPERATED FOR SHOP OR TRUCK
FAST...EASY...SAFE!

NOW . . . reduce material handling time to a minimum with the fast UNIT UTILITY HOIST. One man handles heavy loads where several men were used before. Eliminates serious accidents caused by heavy hand lifting. Reduces labor costs, increases work output per day.

★ FROM SHOP TO TRUCK HOIST in seconds! Simply lift UNIT UTILITY HOIST from 3-wheel frame, place in socket or well mounted on truck bed, work bench, loading dock or machine tool. Hoist swings 360° in well.

Write Dept. N for Complete Details

Manufacturers of hydraulic cylinders for original equipment.

UNIT HYDRAULIC EQUIPMENT
UNIT MANUFACTURING CO.
1229 HARMON PLACE • MINNEAPOLIS 3, MINNESOTA

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MORE SOLD THAN ANY OTHERS
Write for Catalog
OF USES
AND SPECIFICATIONS

GENERAL
Industrial Pneumatic Tires

..SAVE TIME·LABOR·MONEY
Protect equipment and floors • Reduce Breakage

- ★ Wide Base Wheel
- ★ More Air Volume
- ★ More Stability
- ★ More Load Capacity
- ★ Longer Miles in Hi-Speed Service

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low and high speeds.

Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

Send for Catalog • Dept. 3

THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

NEWS NOTES—Continued

▼ BREVITY—Identify by IEN - 263 if you write the maker ▲▼

CONVEYING . . Application examples of power belt conveyors to handle pressroom work

Rapids-Standard Co.
342 Rapistan Bldg., Grand Rapids 2, Mich.

Field Reports are 4-page illustrated folders, each covering a specific example of Press-Veyor units, which the company will send you on request. Each describes the problem involved in handling parts in a forge shop or press room, illustrates the application, includes performance reports.

▼ BREVITY—Identify by IEN - 264 if you write the maker ▲▼

CUTTING . . Two-page color-coded chart recommends wheels for 64 abrasive operations

Allison Co.
255-59 Island Brook Ave., Bridgeport 8, Conn.

Alnico to Worthite is the range of materials listed in a two-page chart that occupies the center spread of new 16-page booklet, "Abrasive Cutting." Recommended wheels are given for wet and dry cutting operations, grouped under soft, medium and hard types. Color coding distinguishes the three types. Balance of the booklet describes cutting machines, wet and dry abrasive cutting, maintenance suggestions.

▼ BREVITY—Identify by IEN - 265 if you write the maker ▲▼

ELECTRONIC PRODUCTS . . Submissive tubes with circuit suggestions in new 16-page bulletin

Sylvania Electric Products Inc.
1740 Broadway, 16th Floor, New York 19, N. Y.

Ratings and performance data are given by tables in new bulletin, "Subminiature Tubes", on 25 types intended to meet exacting requirements for vibration, shock, temperature, life. More than half of the bulletin describes mounting, temperature considerations, potting, application notes, circuit diagrams.

▼ BREVITY—Identify by IEN - 266 if you write the maker ▲▼

HEAT TREATING . . House publication article describes protective atmospheres for annealing wire

Surface Combustion Corp.
2373-77 Dorr St., Toledo 1, Ohio

Current issue of "Heat Treat Review" contains a technical article written by E. G. Coriolis, company's director of research, and O. E. Cullen, chief metallurgist, on protective atmospheres for annealing non-ferrous wire. It covers selection factors, handling methods, bright annealing. If you are interested, ask that your name be added to the list.

▼ BREVITY—Identify by IEN - 267 if you write the maker ▲▼

HEATING . . Booklet describes operation of electronic induction heater and shows uses

General Electric Co.
Dept. 6X-201, Schenectady 5, N. Y.

Schematic drawings show basic operating principle of the induction heater in new 16-page Bulletin GET-1872. Pictures show essential operating components of a typical machine. Other pictures show coils and fixtures employed, typical setups of work to be brazed, soldered, heat-treated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

▼ BREVITY—Identify by IEN - 268 if you write the maker ▲▼

FOR BETTER FLOAT PERFORMANCE *at Lower Cost!* USE CHICAGO STAINLESS STEEL
FLOATS

THE real cost of float performance can only be measured by the original cost against the length of trouble-free service given. That's why Chicago chromium-nickel stainless steel floats are your best bet from both a cost and a performance standpoint. They stay in service longer, eliminating common float failures such as corrosion, collapsing, lack of buoyancy and high temperature failure. When you install stainless floats you can forget them. They'll give many years of low-cost, trouble-free service. Check with Chicago Float for the best in stainless steel floats.

SEND FOR COMPLETE CATALOG

CHICAGO FLOAT WORKS, INC.
2326 So. Western Ave. Chicago 8, Illinois

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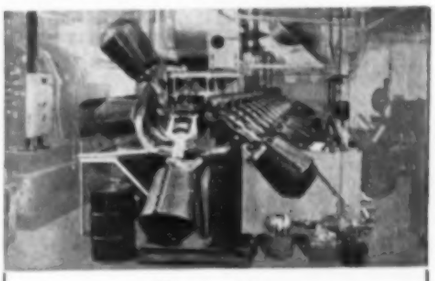


Presenting

THE NEW STEVENS SUPER "E" FULL AUTOMATIC BARREL PLATING MACHINE

Imagine one man processing 16,000 pounds in eight hours! That is what this new Stevens plating machine can do for you. Like the famous Stevens Model "C," the new Model Super "E" can be used for Cleaning, Pickling, Plating and Drying—and it will automatically unload the processed parts. All you do is load it—manually or automatically.

Designed primarily for the plating and finishing of bulky metal parts in large volume, the Stevens Super "E" will bring important savings to your operations. Low cost per piece or pound is immediately evidenced. Ask your Stevens representative for details or write *Frederic B. Stevens, Inc., Detroit 16, Mich.*

▼ BREVITY—Identify by IEN - 270 if you write the maker ▲▼

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

▼ BREVITY—Identify by IEN - 271 if you write the maker ▲▼

HIGH EFFICIENCY
DUST CONTROL
with DUCON WASHERS

- Afford the most economical and efficient control and wet suppression of dust and fumes because of superior design and unique features.

- In addition to use for washing of air and gases, DUCON Centrifugal-Wash Collectors are ideal for many other applications such as: gas absorption, condensation of solvents, heat exchange, distillation and chemical reactions.
- Assure collecting efficiency up to 99%. No secondary dust problem. No moving parts, therefore practically no maintenance. Retains constant air capacity. Eliminates fire and explosion hazards. Can be used in high temperatures.
- Construction steel plate, electrically welded. Easy accessibility to all internal parts. Built for simplified installation.

Write for descriptive, illustrated Bulletin CW48-1.

The DUCON Co.
MINEOLA, N. Y.

BREVITY—Identify by IEN - 272 if you write the maker

CARTER GUIDE LINE LIGHTS

NEWLY DESIGNED
to Cut Costs *Still More!*

AS ALWAYS . . . Carter Guide Line Lights throw a straight black shadow line across your work for quick, accurate straight line sawing.

BUT NOW . . . there's a new type 1000 watt bulb that means even longer service—1/3 greater lumen output. And you can now get *from 1 to 5 shadow lines*—making the Carter Light ideal for gang rips.

Write for free illustrated folder.

CARTER PRODUCTS COMPANY, INC.
420 Wm. Alden Smith Bldg.
30 Ionia Avenue, S. W.
GRAND RAPIDS 2, MICH

Carter

CUTS COSTS WAY DOWN!

BREVITY—Identify by IEN - 273 if you write the maker

SAFER LOAD BREAKING

New Switch Withstands Heavy Short Circuits Without Damage

For the first time in a safety switch, magnetic repulsion is used to break loads quickly, safely.

The unique "arc-quenching" action of Trumbull's HCI (High Capacity Interrupter) Type A switch provides extra safety and lengthens contact life by preventing pitting.

Other safety features: no exposed live parts when switch is OFF and door is open . . . no faulty indication—switch is either fully ON or fully OFF. Underwriters' Laboratory Approved.

Write for Bulletin TEC-10.

TRUMBULL ELECTRIC
Department of General Electric Company
PLAINVILLE, CONNECTICUT

BREVITY—Identify by IEN - 274 if you write the maker

NO "JACK KNIFE" ACTION HERE

— You cut with full hydraulic control

Users report several times longer blade wear with the W. F. Wells saw. Easy to see why, too! Here's a unit that feeds down EVENLY on the job—fully supporting its blade. You can select and hydraulically control BOTH speed of descent and blade pressure. Perfected by the pioneers in band saw manufacturing, these units will speed your production . . . reduce your cut-off costs.

WRITE TODAY for complete literature covering bar feeds, coolant systems, and other accessories.

W. F. WELLS & SONS
Three Rivers, Michigan

NEWS NOTES—Continued

BREVITY—Identify by IEN - 275 if you write the maker

MANAGEMENT . . Financial statement presents the figures in concise understandable manner

Dow Chemical Co.
913-17 Jefferson Ave., Midland, Mich.

"Facts and Figures" titles new 36-page presentation of the company's 1951 financial statement. It tells where the dollars came from and how they were spent, what the company owns and what it owes, status of pension and profit-sharing plans, group insurance, employee stock purchase plan, safety, employment and service, growth. You may be interested to see this example of an understandable financial statement.

BREVITY—Identify by IEN - 276 if you write the maker

METALS . . How to identify them for scrap salvage and other purposes described by booklet

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

Spot-testing procedures are given in detail by new 48-page booklet, "Rapid Identification of Some Metals and Alloys." It starts with a preliminary classification by density into very heavy, heavy, light and average metals. Then for each group the procedure is given by a schematic chart and accompanying instructions, reactions and conclusions.

BREVITY—Identify by IEN - 277 if you write the maker

METAL SPRAYING . . Salvaging worn parts with metal spray described in house publication

Metallizing Engineering Co.
38-16 30th St., Long Island City 1, N. Y.

Current issue of "Metco News" tells about a number of specific salvage operations on worn metal parts under the title, "Stretching Your MRO Dollars with Metallizing." A separate article describes methods of sealing sprayed coatings of zinc and aluminum when used for corrosion prevention.

BREVITY—Identify by IEN - 278 if you write the maker

PLANT SITES . . Locations available summarized by new map and monthly newsletter

Dept. of Water & Power
Box 3669-A, Terminal Annex, Los Angeles 54, Calif.

Where to locate an industrial plant in the city of Los Angeles is shown in a new 12-page pocket folder which opens up into an 11 by 14-in. map showing 10 industrial zones. Detail maps are available on each. It also summarizes the city's industrial facilities. A newsletter, "Production Expediter," carries lists of vacant industrial properties.

BREVITY—Identify by IEN - 279 if you write the maker

PLASTICS . . Condensed reference data on some 50 plastic materials and their uses

Bakelite Co.
30 E. 42nd St., Dept. 1503, New York 17, N. Y.

Bakelite and Vinylite plastics and resins are summarized as to types, properties and uses in new 8-page Bulletin G-19. They are grouped into molding and extrusion materials, flexible film and sheet, protective-coating resins, rigid sheets, calendering resins, and resins for laminating, bonding, adhesives. Pictures illustrate many of the applications described.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 280 if you write the maker

FOR LOWER COST
Gas Heating
select **Janitrol**
UNIT HEATERS

LOWER INITIAL COST / OPERATING COST / MAINTENANCE COST

30 Sizes—Types
Janitrol offers the most complete line of Unit Heaters to meet individual requirements.

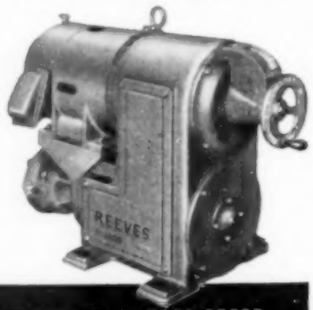
If you are planning on modernizing your heating—need supplementary heat for plant enlargement—if you are building or leasing an industrial building—you can save on equipment, operating and maintenance costs with Janitrol Unit Heaters. Remember, you get more worthwhile design features with Janitrol, plus proven performance.

Write today for complete specifications.

SURFACE COMBUSTION CORPORATION • DEPT. F, TOLEDO, OHIO

BREVITY—Identify by IEN - 281 if you write the maker

A complete variable speed power plant in single unit



Combines motor, REEVES speed varying mechanism, and speed reducer in one, space-saving unit.

REEVES VARI-SPEED MOTODRIVE

To new machines or old, REEVES Vari-Speed Motodrive brings all the benefits of stepless speed adjustability. Available with any standard, constant-speed, foot-type motor—no special motors to stock. Horizontal and vertical models, 1 to 25 hp; 2:1 through 6:1 speed ratios; fractional hp sizes in speed ratios through 10:1; manual or automatic controls. Assures *positive, accurate* speed changes without stops—easily applied to machines in service—proved in 300,000 installations. Send for free catalog No. IN 72-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

BREVITY—Identify by IEN - 282 if you write the maker

Recently Developed

3-WAY FULL AREA, PACKLESS SOLENOID VALVES

PIPE SIZES: 1, 1¼, 1½ and 2 inches

We recommend this valve for controlling equipment where pressure must be alternately applied and exhausted as, for example, with diaphragm motor valves, air or hydraulic cylinders, etc. Classed as Bulletin 8551 ASCO Valves, here are a few specifications: maximum pressure 125 to 250 pounds; minimum pressure 10 to 20 pounds. Suitable for handling air, water, gas, oil and other non-corrosive gases or liquids up to 180°F.

Since the automatic control of any alternating application and release of pressure is so important for efficient operation, we suggest that you bring your problems to the attention of our engineers whose experience goes back nearly 40 years.

ASCO Solenoid VALVES

If you have recurrent and varying needs for automatic control valves, you should have our General Valve Catalog No. 23.

When in need of Automatic Transfer Switches, Remote Control Switches, Contactors, Relays, and Specialized Electromagnetic Controls, come to us.

Automatic Switch Co.
383 LAKESIDE AVENUE • ORANGE, NEW JERSEY

BREVITY—Identify by IEN - 283 if you write the maker

a stand-out

Here is one of the newest coolers in the Halsey Taylor line—designed for long life and faultless service, with its gleaming stainless steel top and distinctive Halsey Taylor health safe advantages. It's a stand-out in coolers . . . but just one of the many made by Halsey Taylor for office or plant use! Write for literature.

HALSEY TAYLOR
Coolers

THE HALSEY W. TAYLOR CO. WARREN, OHIO

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Both "PANORAMS" give BIG VALUE for Your EYE PROTECTION MONEY!

Model numbers and sizes differ (AO 600 for medium and larger faces—AO 800 for smaller faces) but you'll find the same superb wide angle vision, lightweight comfort and conformance to high safety and optical standards in both of these plastic goggles. Worn directly over the eyes or personal glasses, they protect against flying particles from any direction. For chipping, grinding, babbitting, cutting rivets or rails, riveting, spike driving, spot welding. Your nearest AO Safety Products Representative can supply you.

American Optical COMPANY SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

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BUILD WITH

GIANT G-P PANELS

Standard 12', 14' and 16' lengths or "Scarfed" to suit your needs

Georgia-Pacific giant Fir Plywood panels are helping to solve production problems and are saving installation time and money in countless industrial, construction and marine uses.

Quality-produced by modern hot plate presses, these extra-length panels are available in natural 12 ft. or scarfed 14 ft. and 16 ft. lengths. Special sizes to meet your specific application can also be produced.

Write, wire or phone your nearest G-P office for prices and size recommendations to fit your particular application.

GP

GEORGIA—PACIFIC PLYWOOD COMPANY

614-1 North Capitol Way, Olympia, Washington

Offices or Warehouses in: Augusta • Birmingham • Boston • Chicago • Columbia • Louisville • Memphis • Nashville • Newark • Olympia • Philadelphia • Pittsburgh • Providence • Raleigh • Richmond • Savannah

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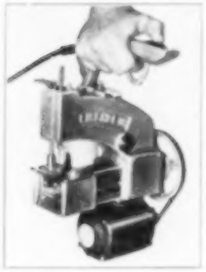
PACKAGING . . Sewing machine, portable, for bag and bale closing

Source: DAVE FISCHBEIN CO.
36-40 Glenwood Ave., Dept. IEN, Minneapolis 3, Minn.



Uses 12-4 thread

Model CH is a new portable motor-driven sewing machine designed particularly to close bales, large containers and other bulky packages. It will sew any textile material such as cotton or burlap and paper as well as specially processed materials of a similar nature. Operation is at about 40 fpm. and weight is 10½ pounds.

The operator holds the machine in one hand and the material in the other. He pushes a thumb switch to start the action. Operation is on 110-volt ac or dc. A 220-volt motor can be specified. Overall dimensions are about 14 by 8 inches.

▼ BREVITY—identify by IEN - 288 if you write the maker ▼

LUBRICATING . . Wax coolant for hack saw blades, routing cutters

Source: S. C. JOHNSON & SON
1523-27 Howe St., Racine, Wis.

Single gallons list at, $4.

New liquid, a non-inflammable aqueous wax emulsion known as No. 170, has been developed for use as a cutting lubricant or coolant in connection with power hack saws and routing machines. The emulsion is employed in a water solution to feed to the work where it promotes clean cutting, minimizes burring and welding. In routing work it assists the operator to guide the cutting head. The material is not designed for use in equipment such as lathes and milling machines. Packaging is in 1 to 55-gal. containers.

▼ BREVITY—identify by IEN - 289 if you write the maker ▼

SANDING . . Vacuum attachment applies on company's floor machine

Source: UNITED FLOOR MACHINE CO.
7610 S. Greenwood Ave., Chicago 19, Ill.

Eliminates sweeping

Dry-Vac is a new assembly of motor-driven suction blower, flexible inlet-hose connections, moleskin dust bag and rubber floor skirt. It applies on the company's standard design of sanding, steel wooling and polishing machine for floor finishing. The new attachment picks up dust and dirt and deposits them in the bag. It creates intake suction around the skirt so no dust can issue from the machine at this point. The skirt includes a sleeve-type rubber bumper.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—identify by IEN - 290 if you write the maker ▼

Preferred for All General Overhead Work

Ezebilt MAINTENANCE SCAFFOLDING

For simpler, more economical scaffolding specify Universal "Ezebilt"—"Up Faster, No Bolts to Master." The basic scaffold parts, with casters, can form a rolling maintenance tower with elevated platform work level, passageway and work clearance. Send for catalog of simple erection.

RENT OR BUY

Distributors throughout the country offer fast help and service from basic stocks—Sale or Rental.

UNIVERSAL MANUFACTURING CORP.
920 NORTH ST., ZELIENOPLE, PA.

▼ BREVITY—identify by IEN - 291 if you write the maker ▼

BE FRESH . . STAY FRESH

Wear a

Dupor no. 1

miniature NOSE MASK for Dust, Fumes, Paint Spray

Has 9 sq. in. filter. Mask is of soft rubber equipped with nose wire that's adjustable to any shape nose. Exhalation valve exhausts breathed air and keeps out unfiltered air. Handy as a pair of glasses. Complete panorama vision, no blind spots. Does not interfere with talking, eating, smoking. Fits the vest pocket. Weighs 1 oz.

Sample sent $1.20 *ppd*

H. S. COVER, South Bend, Ind.

▼ BREVITY—identify by IEN - 292 if you write the maker ▼

A Packaged Conveyor you can erect yourself

Here is a complete overhead, power driven, monorail conveyor for light and medium loads—the MHS Junior Monoveyor.

You make your own layout to meet whatever manufacturing, transportation and storage requirements you have. Order the necessary components and erect it yourself. No lost time—no unnecessary expense.

Write for Bulletin JM-1 for complete details on components and layout.

Mechanical Handling *Systems Inc.* MHS

4605 NANCY AVE. • DETROIT 12, MICH.

Offices in Principal Cities

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MANY INDUSTRIAL ROLL PROBLEMS are solved by using

SHAF-TITE* ROLLS

Minimum sizes 3" diameter and 3" face length

Patented constructions provide strongest possible shaft setting. Take your choice of many different types and materials—wood, rubber, iron, brass, stainless steel, etc. Whatever your roll problem, put it up to

RODNEY HUNT

Send For Catalog Today!

Industrial Roll Division

RODNEY HUNT MACHINE CO.

675 Main Street, Orange Massachusetts, U.S.A.

▼ BREVITY—Identify by IEN - 294 if you write the maker ▲▼

Write for

DELAVAN'S

New

Industrial Spray

CATALOG NO. 31

Illustrates the nozzle and lists specifications that conform best to your particular industrial or air conditioning application.

Available to you at no cost on request.

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

▼ BREVITY—Identify by IEN - 295 if you write the maker ▲▼

ONE MAN DOES THE WORK OF TEN

with HYPRESSURE

Jenny

STEAM CLEANER

You can keep your plant and equipment spic and span for one tenth the cost of cleaning by hand! In a single hour, one man, using Hypressure Jenny, can do more cleaning and sanitizing than ten men can accomplish by hand methods. Not only does Jenny do a faster and better job of plant housekeeping, but by stripping grease and dirt from machinery before repairs, machine "down-time" is cut by as much as 40%. It will pay you to get full facts about how you can reduce your cleaning costs by 90%. Write today. There is no obligation.

Distributors in all parts of the world. For local representative see Classified Telephone Directory.

HYPRESSURE JENNY DIVISION — HOMESTEAD VALVE MANUFACTURING CO. — Cleaning since 1862 — P. O. BOX 85 — COraopolis, PA.

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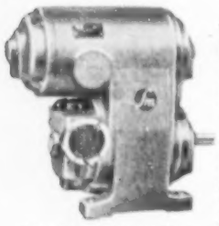
POWER COSTS CUT 15% MAINTENANCE CUT 75%

Modernization of our multiple spindle drilling machine with a Speed-Trol drive, reports Mr. William L. Thomas, Plant Engineer of Utica Drop Forge & Tool Corp. of Utica, N. Y., enables us, for the first time, to utilize the full productive capacity of this machine. Power costs were cut 15%, maintenance was reduced 75%. We are able to adjust speeds quickly and accurately to correct drilling requirements with Sterling's fingertip control of speed.



70 ILLUSTRATIONS showing how Sterling Electric Power Drives reduce production costs. Write for Bulletin No. A-127.

STERLING SPEED-TROL GIVES YOU VARIABLE SPEED CONTROL NECESSARY FOR:

Equipment adaptation to. Sequence synchronization—operator abilities—seat variations due to differences in quantity, quality, weight, size, texture, hardness or shape of material to be processed, machined, conveyed, blended, mixed, etc.

Process control of: Temperature—viscosity—level—pressure—flow—etc.

Time control of: Baking—drying—heating—cooking—pasteurizing—soaking—chemical action—etc.

With Speed-Trol you get the maximum in production, plant efficiency, quality and profit.

STERLING ELECTRIC MOTORS

Plants: New York City 51, Van Wert, Ohio, Los Angeles 22, Hamilton, Canada, Santiago, Chile. • Offices and distributors in all principal cities.

NEWS NOTES—Continued

▼ BREVITY—Identify by IEN - 297 if you write the maker ▲▼

MILLING . . Theory and practice in new 900-page book based on company's experience

Cincinnati Milling Machine Co.
Marburg & Kline Sts., Cincinnati 9, Ohio

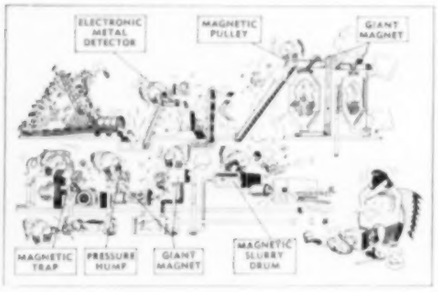
New Third Edition is announced for the company's book, "Treatise of Milling and Milling Machines," list price $8. Text accompanied by 700 illustrations and charts describes functions and operations of milling machines and attachments, cutting tools and technical data on metal cutting, practical applications of tool-room milling and die sinking, principles of fixture design, selection of milling machine equipment.

Six chapters present examples of milling operations such as indexing, helical surfaces, curved-contour-surfaces, complex contours, toolroom work and inspection. These examples include instructions, sample calculations, illustrations of the work and the machine setup. The last chapter tells how to estimate production milling jobs.

▼ BREVITY—Identify by IEN - 298 if you write the maker ▲▼

SEPARATING . . Cartoon shows where to use permanent magnet separators in a paper mill

Eriez Mfg. Co.
1303 E. 12th St., Erie, Pa.



Flow chart illustrated is a feature of new 4-page Bulletin 561, "Permanent Non-Electric Magnetic Separators for the Paper Industry". The little horseshoe magnets dressed like Indians represent application points for various types of the company's equipment to detect and knock out tramp iron, also symbolized by a little figure. Condensed descriptions are given inside the bulletin on the products named in the captions appearing at each application point.

▼ BREVITY—Identify by IEN - 299 if you write the maker ▲▼

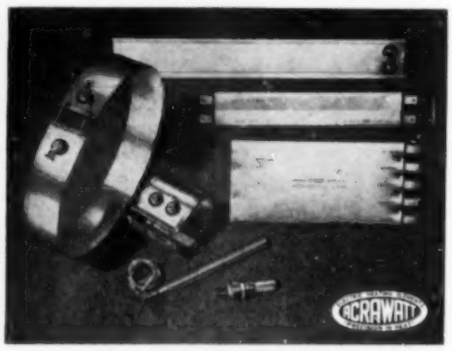
PRESSES . . Set of drafting templates to assist in layout of hydraulic circuits

Denison Engineering Co.
1158-62 Dublin Road, Columbus 16, Ohio

"JICircuit Guide" titles new 32 page booklet which includes a plastic template carrying basic elements of JIC symbols dealing with hydraulic circuits. The booklet is available on letterhead request to individuals directly concerned with industrial hydraulic design, engineering, circuit application. Circuit components in the booklet are represented by symbols, each accompanied by catalog references to the company's "HydrOHLic" equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 300 if you write the maker ▲▼



specifying ELECTRIC HEATERS?

ACRAWATT Elements in any of the above forms may serve you well in your newly-designed product. Our specialty, however, is to make heating elements fitting your specific needs . . . whether for weight-saving or for cost-saving characteristics. Long runs and repetitive production are our strong points. Our experience and ability are recognized by many of America's leading engineers. Your inquiries are solicited.

"THINSTRIP" Reflexed Bands and Bars. Compacted Core Cartridges . . . Immersion Heaters.

- RAPID HEAT TRANSFER
- LONGER LIFE
- LOWER COST

ACRA INDUSTRIAL ELECTRIC CO.
9905 PACIFIC AVENUE FRANKLIN PARK, ILLINOIS

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It pays well to clean well!

KENT Floor Maintenance Equipment

Guard your manpower! Keep floors up, accidents down—with SAFE floors in your plant, your office, your cafeteria! KENT does this job best!

KENT FLOOR MACHINE with "Balanced Power" combines all-weight-on-the-brush efficiency with ease of operation. Moving parts are reduced to a minimum!

KENT VACUUM CLEANER for Wet and Dry Pick-up removes scrub water . . . dry vacuums floors, walls, overhead pipes and girders, etc. And it's built to last!

See us at the Plant Maintenance Show, January 14-17, Philadelphia, Booth 338, or write for full information.

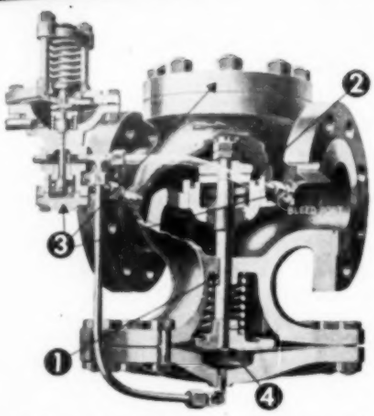
CLEAN WITH **KENT** EQUIPMENT

THE KENT CO. INC., 437 CANAL ST., ROME, N. Y.

▼ BREVITY—Identify by IEN - 302 if you write the maker ▲▼

Here's Why **SPENCE REGULATORS**

CUT COSTS . . . REDUCE MAINTENANCE



Thousands of installations throughout the country have proved that Spence Pilot-Operated Regulators provide *dependable, trouble-free* pressure and temperature control year-in, year-out. Here are a few of the many Spence features that save you money . . . help keep *maintenance at a minimum.*

1. PACKLESS CONSTRUCTION of all Spence main valves and most pilots *eliminates the need for closely fitted parts* that may stick or bind due to uneven expansion or foreign matter.

2. DURABLE SECO METAL SEATS AND DISCS resist wiredrawing. More than 20 years of experience with SECO Metal *has failed to produce one case where it has been cut by steam.*

3. EASY TO CLEAN WITHOUT DISMANTLING — The seat and disc of the main valve and pilot can be cleaned and any working part removed *without taking the main valve out of the line.*

4. LONG-LIFE METAL DIAPHRAGMS, under usual conditions, never require replacement. The durable spring in the Spence Regulator operates at low unit stress . . . *out of the path of the steam* or other fluid flowing through the valve.

FREE BULLETIN NO. 4000 gives complete data . . . contains full color, fully illustrated description of the operating cycle of a Spence Regulator.

Spence

JD-104

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

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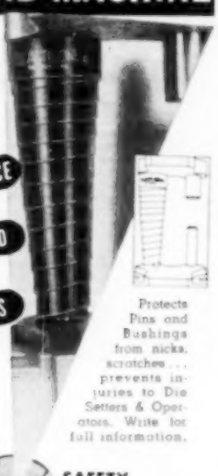
LOW COST PROTECTION FOR MAN AND MACHINE

ELASTICONE®

GUIDE PIN COVERS



JUST SNAP INTO PLACE

NO TOOLS REQUIRED

NO INSTALLATION COSTS

Elasticones are manufactured in stock sizes. Specify O.D. of bushing and full open height of set when ordering.

Protects Pins and Bushings from nicks, scratches . . . prevents injuries to Die Setters & Operators. Write for full information.

CENTRAL SAFETY EQUIPMENT COMPANY

2200 E. HUNTINGDON STREET PHILADELPHIA 25, PA.

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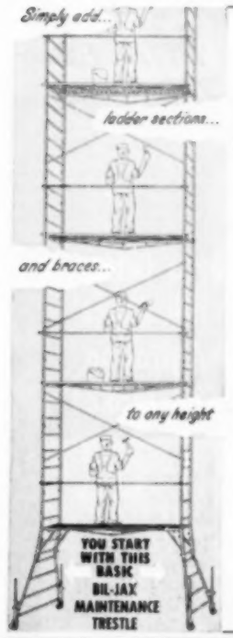

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MAINTENANCE TRESTLE

gives you

ANY HEIGHT . . .

FASTER
SAFER
EASIER

Cut time and labor costs with these sturdy, all-steel trestle units. Many height variations possible, from one foot up. Ball bearing casters (locking type) make unit easy to maneuver. Patented. U. L. approved.

ALSO: sectional scaffolding, ladder jacks, hoist arms, sectional and lean-to ladders.

For sale or rent. Write for Bulletin No. L-1

BIL-JAX, Inc.
ARCHBOLD, OHIO

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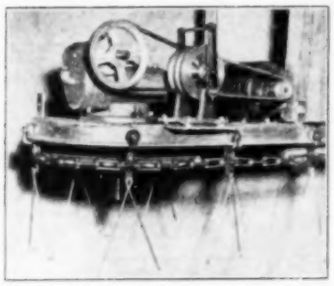
KEYSTONE JUNIOR CONVEYORS



100% prefitted, bolted joints. No track welding, cutting or fitting required for installation. Easily installed. Low first cost. Overhead or floor supported. Load capacity 800# per trolley. Rivetless drop forged chain 2" pitch. Ball bearing grease packed wheels with drop forged or formed steel trolley brackets.

KEYSTONE JUNIOR CONVEYORS are identical to their big brothers—the 348 & 458 which are the accepted standard throughout the world. The Keystone Junior picks up where the 348 leaves off. Handling loads up to 800# per trolley or total live loads up to 15,000# with a single caterpillar or sprocket drive and where necessary using synchronized multiple drives. It is a little giant. Minimum vertical turns 2'-9 radius, minimum horizontal turns 9" diameter. Turning hooks available for use in spray booths, ovens, etc. Conveyor speeds from 3 I.P.M. to 80 F.P.M. available.

FOR THE CONVEYOR THAT WILL GIVE MAXIMUM ECONOMY AND FLEXIBILITY AT LOW FIRST COST

WRITE FOR BULLETIN #511

KEYSTONE CONVEYOR COMPANY

21750 West 8 Mile Road Detroit 19, Mich.

▼ BREVITY—Identify by IEN - 307 if you write the maker ▲▼

CLEANING . . Washing machine reciprocates work in hot solution

Source: MACNUS CHEMICAL CO.
1951 South Ave., Garwood, N. J.

Fits in conveyor line

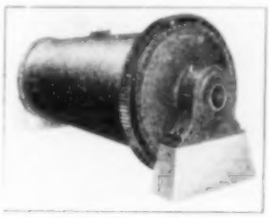
Air pressure from a shop source is connected to a 3-in. cylinder at the rear of this new Aja-Lif machine and cylinder operation is controlled at a valve on the side of the machine housing. In one position of this valve the cylinder raises a removable load-carrying grate flush with the top of the housing so work pieces or baskets filled with work can be loaded and unloaded. In a second position it lowers the grate and work to near the bottom of the housing and reciprocates it in that position through a 5 or 6-in. stroke at 40 to 50 complete cycles per minute. Air pressure at 150 lb. is sufficient to handle a 450-lb. load.

Heat can be specified by steam, gas or electricity. It locates in a chamber at the back of the load-carrying grate. Three machine sizes measure 30 to 54 in. in length, 30 to 42 in. in width, 33 to 39 in. in depth, all on inside dimensions. The grate fits within the length named and is 20 to 30 in. in width. The liquid capacity is 95 to 300 gallons. The equipment weighs 650 to 1,200 pounds.

▼ BREVITY—Identify by IEN - 308 if you write the maker ▲▼

PULVERIZING . . Ball and tube mill, sizes 2 by 2 feet to 10 by 24 feet

Source: PATTERSON FOUNDRY & MACHINE CO.
50 St. George St., East Liverpool, Ohio



Feed is through trunnions

Cast-steel heads, conical in shape for rigidity, are assembled replaceably in a welded-steel shell in this new mill. The heads are bolted to a ring flange on the shell. They ride on trunnions in the bearings at the two ends, take the load on shoulders so the bolts are in tension only.

The shell can be lined with various materials suited for given services in either fine or coarse production and wet or dry operation. Drive is through a T-section ring gear that is split and assembled so it can be reversed after wear occurs on one face of the teeth.

The bearings are equipped with oil-circulating equipment that can be started prior to starting the mill. A combination water-cooling and lubricating installation is employed when plastic-sleeve bearings are specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

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DILLON

PRECISION DYNAMOMETER

INDICATE TENSION DIRECT IN POUNDS!

9 capacities from 0-500 lbs. up to 0-20,000 lbs.

Weigh only 8 lbs. 4 oz., measure 8¼" x 6¼" x 3"

An ideal laboratory or field instrument for indicating tension or stress in cable, rope, castings, assemblies, many other mechanical setups. Thousands in use by leading plants. Fits into "tight" spots easily. Not injured by accidental overload. Has safety glass cover and maximum hand. PRICED LOW. Immediate shipment.

WRITE FOR INTERESTING BULLETINS

1421-K South Circle Ave., FOREST PARK, ILL.

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HANSEN - the Tacker with 1001 Uses

BOAT seats and life-preserver units are put together in a fraction of time formerly required—with the Hansen Model T-2 Tacker—for Lee L. Woodard Sons Co., furniture manufacturers, Owosso, Mich.

Tacker is more efficient. Provides neater, longer-holding seat covers. Saves 8c per seat cover over previous method.

In all types of industries, Hansen is proving itself a faster, neater, better way to fasten. Thirty-six models. 80 staple sizes. Submit sample or sketch with your problem.

HANSEN

A.L. HANSEN MFG. CO.
5051 RAVENSWOOD AVE.
CHICAGO 40, ILL.

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Dick 960 A B Dick 960 A B Dick 960
GRAPH MIMEOTYPE MIMEOGRAPH MIMEOTYPE

NEW A. B. DICK MIMEOGRAPHS

black-on-white COPIES or colored copies of anything typed, written or drawn

produced FAST on most all paper and card stocks at speeds ranging up to 180 copies per minute

and EASY on today's A. B. Dick mimeographs with many new features and improvements for more efficient operation

WRITE TODAY for full details

A B DICK COMPANY
5700 Touhy Ave. • Chicago 31, Illinois
For use with all makes of suitable stencil duplicating products

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Economize on Cleaning Costs NOW!

In more and more plants, General Electric Heavy-duty Vacuum Cleaners are being used because they speed thorough cleaning of all areas.

These powerful cleaners provide efficient, economical dust control around machines, make gathering of small metal or other scrap easy. Wet pickup is also a feature. Write for particulars.

MAIL TODAY

GENERAL ELECTRIC COMPANY, Dept. 22-9580
1285 Boston Ave., Bridgeport 2, Conn.

Send me, without obligation, details on G-E Heavy-duty cleaning equipment.

Name
Firm
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City State

GENERAL ELECTRIC

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No Leveling Required With

Anderson

BALANCING WAYS

With Anderson Balancing Ways it is easy to balance any rotating object in a fraction of the time formerly required by other methods. Simply place the Ways on the floor or bench and they are ready to use without adjustments of any kind.

Swing	Between Standards	Capacity in lbs.
20 in.	20 in.	1,000
40 in.	30 in.	2,000
60 in.	30 in.	2,000
72 in.	60 in.	5,000
96 in.	80 in.	10,000

The revolving, chilled iron discs and the spindles are ground and balanced to extreme accuracy. Spindle bushings are hardened — glass hard — yet without danger of breaking. This eliminates the possibility of wear or ball bearing indentations on spindles or bushings when heavy weights are placed on the Ways. They save time, save labor, and assure better work.

ROCKFORD Anderson BROS. MFG. CO. ILLINOIS

Write for Bulletin No. 1-35

ANDERSON BROS. MFG. CO., Rockford, Ill.

Balancing Ways, Roto Checkers, Hand and Power Scrapers, Spotters, Hand and Power Hydraulic Straightening Presses

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Generalift ★★★★★

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REDUCE STORAGE COSTS

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Continental Box Company, Inc., Houston, Dallas
General Box Company of Mississippi, Meridian, Miss.

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Who's Training Your New Employees . . .

Don't put your new employee in this position . . . . Help him off to a good start with the proper training aids . . .

Now available . . . . CARBIDE CUTTING TOOLS, the first authoritative text book on carbides, designed to inform the student, the designer and the man at the machine.

"KNOW HOW" — the best productive use of man, power, machines and materials is essential in our present emergency. It is with this in mind that V-R is making this book available.

CONTENTS: Machine Tools and the Carbides Converting to Carbides, Tool Angles, Machinability, Tooling a Carbide Tool, Grinding Single Point Tools, Cutting Speeds, Feeds, Speeds, Tool Design, Fixtures and Carbide Tools, Carbide Forming Tools, Carbide Milling Cutters, Sharpening Milling Cutters, Multiple Edge Carbide Tools, Cutting Speeds, Feeds, Fixtures, Maintenance, Tool Design, Selection of a Carbide, Tool Materials, Annealing, Grinding and Use of Tools, Index.

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NEWS NOTES—Continued

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PYROMETERS . . Technical article reprint on pyrometer sensing elements and characteristics

Tempil Corp.
132 W. 22nd St., 3rd Floor, New York 11, N. Y.

"Notes on Pyrometry" titles 4-page reprint of an article in "Metal Progress" by Dr. G. M. Welten, company's director of research and development. It describes radiant-energy and contact-type pyrometer sensing elements, characteristics of standard types in each classification, problems involved.

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ROCK DRILLING . . By jet-piercing method described in 12-page technical article reprint

Linde Air Products Co.
30 E. 42nd St., Room 308, New York 17, N. Y.

Operating principle of the company's Jet-Piercing machine is described at the start of new reprint bulletin F-2858. It tells how the flame spalls the rock on which it impinges, how water embrittles and removes this rock, machines and hand blowpipes to apply the jet. Balance of the bulletin shows use in mining taconite hard iron ore.

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SAWING . . How to select and use hacksaw blades, bandsaw blade, friction saws

W. O. Barnes Co.
1295-97 Terminal Ave., Dept. H, Detroit 14, Mich.

"Handbook on Metal Sawing" is new 38-page pocket book of information on hand and power saw blades. It includes selection tables on hacksaw and band saw blades by type of service, shows reasons of correction selection of tooth, how to start a cut, speeds and feeds, equipment operation, friction sawing. There is a list of usual problems and remedies.

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SEALING . . Installation instructions on seals for bearings and shafts in new catalog

Garlock Packing Co.
50 Garlock St., Palmyra, N. Y.

Drawings and instructions are given for installation of the company's "Klozure" seals for bearings and shafts, together with selection and engineering data, in new 100-page Catalog 10. Other drawings show typical applications to meet a variety of conditions. The catalog contains a picture index, detail descriptions, size tables.

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STAPLING . . Of metals and non-metals as a method of fastening in product assembly

Acme Steel Co.
2854 Archer Ave., Chicago 8, Ill.

"Metal Stitching", done by machines that form their own staples from wire and then drive them, is title of new 12-page bulletin that reviews product design possibilities. It lists metals and non-metallic materials that can be secured together, shows specific examples, machines and attachments. Drawings show typical staple-assembled sections.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

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IT'S ALLIED FOR RCA RCA

electron tubes for industry

Quick, Expert Service on all RCA special-purpose industrial tubes

ALLIED maintains in stock *for quick shipment*, the world's largest distributor inventory of RCA special-purpose tubes—*of all types*. We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money—phone, wire or write to ALLIED for *quick* shipment. Fill *all* your needs from the *complete, dependable* electronic supply source.

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- Vacuum Power
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- Camera Tubes
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- Special Types

FREE Interchangeability Directory

Valuable guide to selection of proper RCA tube type replaceable. Under 1,000 take 11 cents. Write for Free RCA Guide No. 15-000.

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Refer to your ALLIED Catalog for all electronic supplies—parts, tubes, test instruments, tools, audio amplifiers, accessories—available from the world's largest stocks. Write today for your FREE copy of the complete 212 page 1952 ALLIED Catalog.

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Everything in Electronics from ONE Source

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Modern Design **SPEEDS PRODUCTION**

● Ames micrometer dial indicators are the most modern available today — and naturally so because Ames policy for over 50 years has been continually to improve design, to take advantage of new materials and to utilize the most advanced manufacturing methods. They are a real aid to the quality control engineer who is trying to keep pace with today's high production schedules.

Because Ames Indicators are functionally designed, they have fewer parts than ordinary indicators. Construction is simple with functional parts being larger and more rugged and adequately supported. Operational friction is at a minimum. Thus, Ames Indicators combine extreme sensitivity and accuracy with the ability and endurance to stay right *on the job longer.*

✓ Check this list of features:
1. Forged Solid Brass Case and Stem
2. Heavy Brass Plate
3. Canoe Pitch Stainless Steel Back
4. Hardened and Burnished Steel Pinion
5. Balls Pressed from Steel Engravings
6. Patented Bezel Assembly

Representatives in principal cities **B. C. AMES CO.** 274 Bow Street Waltham 54, Mass.
Mfgs. of Micrometer Dial Gauges • Micrometer Dial Indicators

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Lightnin Mixers

MIXCO® Engineered

ILLUSTRATED Lightnin Gear Drive Portable Mixer

WIDEST CHOICE OF STANDARD STOCK MIXERS—Electric and air-driven types, direct or gear drive. Sizes ⅙ to 3 HP. Ready to operate. Full selection of motors and materials. Replacement parts always in stock.

What a Difference the *Right* Agitation Can Make!

On job after job, LIGHTNIN Mixers have cut process time *in half*—improved product uniformity—slashed manpower costs—simply by giving the correct agitation for the job. You can standardize on LIGHTNIN—because there is a LIGHTNIN Mixer for every fluid agitation job! Get the facts . . . write today for illustrated Catalog B-75.

WHAT TO LOOK FOR IN A PORTABLE MIXER

BALL-BEARING MOTORS . . . Semi-enclosed, totally enclosed, or explosion-proof, as required. One of the reasons for LIGHTNIN's exceptionally long operating life.

BALL AND SOCKET CLAMP permits various mixing actions—pulling vortex, heavy rolling action, or LIGHTNIN two-way action. Mixer can be swung out of tank for cleaning.

SEALED OUTBOARD BEARINGS take the load of mixing shaft off the motor bearings. Permanently sealed to prevent leakage and contamination of the mix.

PROCESS ADAPTED AGITATION — TOP-ENTERING — LIGHTNIN MIXCO — BOTTOM-ENTERING

SEND FOR THESE HELPFUL CATALOGS
Lightnin Portable Mixers . . . Cat. B-75
Lightnin Propeller Mixers for Closed Tanks . . . . . Cat. B-78
Lightnin Side Entering Mixers for Tanks up to 5 Million Gals. . . . . Cat. B-76
Lightnin Turbine and Paddle Agitators, 1 to 200 HP. Cat. B-102

MIXING EQUIPMENT CO., Inc.
(MIXCO) 124 Mt. Read Boulevard, Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., Toronto 1
Representatives in Principal Cities

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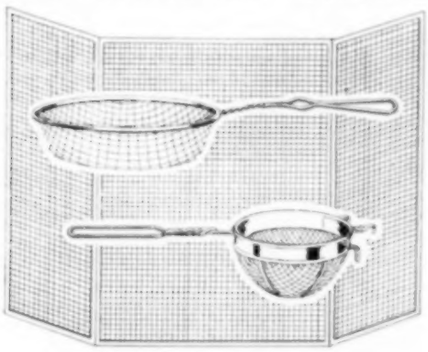
FOR FABRICATING PURPOSES



For information write or phone our nearest sales office:
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THE CALIFORNIA WIRE CLOTH CORPORATION - Oakland, California
WICKWIRE SPENCER STEEL DIVISION - Clinton, Massachusetts

CAL-WIC INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

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the pump with the DUPONT NEOPRENE impeller (oil resistant)

BRONZE, STAINLESS STEEL & IRON CONSTRUCTION —CAPACITY TO 50 GALLONS PER MINUTE

1 **MORE CAPACITY**—for its weight, size and price.
2 **SELF-PRIMING**—starts instantly with high suction lift.
3 **ONE MOVING PART**—tough, long-lived.
4 **GEARLESS**—impeller outlasts metal gears.
5 **TROUBLE FREE**—simple construction.
6 **ECONOMICAL**—low cost—low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

JABSCO PUMP COMPANY
2031 N. Lincoln Street • Burbank, California

▼ BREVITY—Identify by IEN - 327 if you write the maker ▼

New Miracle Material SILICONE RUBBER

ARCOSIL* SILICONE RUBBER PRODUCTS
"O" Rings
Molded
Extruded
Die-cut
Tubing
Ducting
Couplings
Fiberglass Reinforced

Whether the problem is new product design or the improvement of present design, consider silicone, the amazing new rubber that performs to best advantage where ordinary rubbers fail.

For the answer to any silicone rubber problem, call Arrowhead—specialists in the development and manufacture of silicone rubber products of all kinds.

*Trade Mark Reg. U. S. Pat. Off.

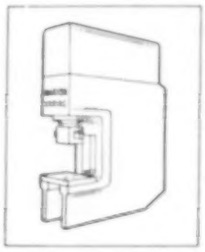
ARROWHEAD RUBBER COMPANY
A DIVISION OF NATIONAL MOTOR BEARING CO., INC.

WRITE FOR ENGINEERING BULLETIN
Gives latest complete data on characteristics and applications of various silicone rubber compounds.

▼ BREVITY—Identify by IEN - 328 if you write the maker ▼

PRESS . . Hydraulic design, 5 to 10 ton on user's pressure line

Source: MARION HYDRAULIC MACHINERY CO.
P. O. Box 211, Marion, Ohio



Valve is part of ram

Oil flow in one direction only characterizes the operation of this new Variac hydraulic press. A 2¼-in. ram operates through a 4-in. stroke in connection with a valve stem that fits inside the upper portion of the ram on its central axis. The company is prepared to assemble the basic power unit in a press frame of required dimensions for connection to a power source supplied by the user. Pressure of 1,500 lb. provides a 5-ton rating and 8 gpm will provide sixty 4-in. strokes per minute.

Oil pressure enters a side connection near the bottom of the diameter of the ram. It moves inward radially through the ram, fills an annular chamber surrounding the small diameter of the ram. It moves inward radially through the ram to connect with a port also radial in the valve stem. When the valve is in "down" position, exhaust through the stem is shut off and pressure moves upward around the stem to apply on the large diameter of the ram. Moving the stem upward with relation to the ram closes the radial port, opens the exhaust to the main pressure area and permits the pressure oil in the annular chamber to provide the pull-back action.

▼ BREVITY—Identify by IEN - 329 if you write the maker ▼

TUMBLING . . Motor driven barrel contains two 18 by 40 in. compartments

Source: GRAV-I-FLO CORP.
402 Norwood Ave., Sturgis, Mich.

This is Model 36-2

Deburring, grinding, polishing operations are performed on ferrous and non-ferrous work pieces, employing the company's Super-Brite finishing chips and compounds. In this new double-compartment barrel. It is a companion unit to the 20 by 44-in. assembly, previously described IEN-2756-51. As in the previous design it is enclosed in a metal housing provided with a guard at the front which stops operation by actuating a limit switch when it is lifted. Drive is by a 5-hp. motor equipped with a magnetic brake for operation on 220/440-volt 60-cycle ac. Water and electrical connections are integral in the assembly.

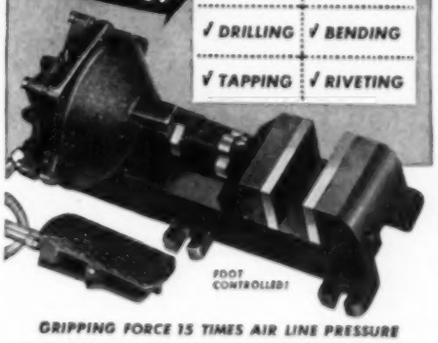
Construction employs ½-in. steel pate for unined design or ¼-in. plate with a rubber lining. Compartment doors have cam locks with manually released safety stops. Starting and stopping is controlled by a lever or, to specification, by a push-button switch when required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 330 if you write the maker ▼

SPEEDY AIR VISE

SPEEDS UP
✓ MILLING ✓ PUNCHING
✓ DRILLING ✓ BENDING
✓ TAPPING ✓ RIVETING



GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings . . . . . only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

▼ BREVITY—Identify by IEN - 331 if you write the maker ▼

Give 'em the BUM'S RUSH!

Don't let Dirt, Dust, and Grit spoil the working efficiency of your machinery and equipment. Rush 'em out of every crack and crevice with a CLEMENTS - CADILLAC blower-suction cleaner. Easy to use, economical. Ask your mill supply dealer.

Eligible under C.M.P. regulations.

SAVE TIME • MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

CLEMENTS CADILLAC

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

▼ BREVITY—Identify by IEN - 332 if you write the maker ▼

LISTEN TO YOUR COMPRESSOR

frequent running costs you money!

CHAMPION

aero-dynamic design . . . cuts running time 6 ways!

Compressors that run too frequently cost you money! Excessive running causes excessive wear, raises electric costs by increasing consumption, and slows work through reduced pressure. Champion Air Compressors are Aero-Dynamically engineered to deliver cool air to the receiving tank in a minimum of running time. Get all the facts on Champion's Aero-Dynamic Compressor design.

this FREE MANUAL shows you how to select the proper air compressor. Write for your copy TODAY!

CHAMPION PNEUMATIC MACHINERY CO.
844 N. Pleasant Street — Princeton, Illinois

PRESSURE CLEANERS • AIR HOSE REELS • AIR ACCESSORIES

▼ BREVITY—Identify by IEN - 333 if you write the maker ▼

NEW "UTILITY SIZE" HOT PLATE

TEMCO

MODEL 1900 . . . for boiling, evaporations and general laboratory work . . .

Ideal unit for a wide variety of routine and critical laboratory uses because of its wide temperature range, exceptionally close control—less than 5° F. variation. Features completely variable control over full temperature range from 100° to 700° F. Compact, convenient . . . plugs into any 110 V. 50/60 Cy. circuit. Plate size, 6" square. Cast aluminum top heats rapidly to all edges. Neon pilot light. Well insulated and ventilated. Price, $19.75. Write for descriptive literature and nearest dealer's name.

THERMO ELECTRIC MANUFACTURING CO.
482 Huff St., Dubuque, Iowa.

▼ BREVITY—Identify by IEN - 334 if you write the maker ▼

QUICKLY BEND PIPE OR CONDUIT EXACTLY AS YOU NEED IT!

Make tailor-made bends *right on the job* with a Greenlee Hydraulic Pipe Bender. One man operated . . . in but a few minutes produces smooth, accurate bends in pipe up to 5", rigid and thin-wall conduit, tubing. Compact, easy to set up and operate. Great time-saver for making piping and electrical installations either on machines being produced or for your plant maintenance and construction.

GREENLEE

WRITE FOR FACTS, get complete information on this and other GREENLEE time-saving tools. Greenlee Tool Co., 1861 Herbert Avenue, Rockford, Illinois

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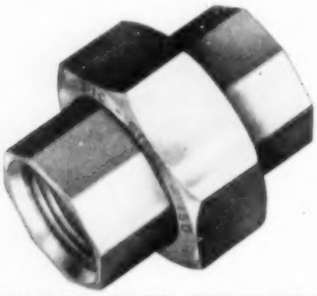

BUYING STEEL UNIONS?
Look at these 6 High Quality Features of PICS!

1 Strong ends of heavy steel pipe coupling stock.
2 Polygonal pipe ends an open end wrench can get hold for easy installation.
3 100% zinc plated for rust protection. (Even the threads)
4 Special wedge type bronze seat assures tightness.
5 Full, clean-cut threads won't strip or deform.
6 Strong shoulders resist wrench abuse.

PLUS prices lower than galvanized, no more than black malleable unions

Write for Free Samples!

DART UNION COMPANY
130 Thurbers Avenue, Providence 5, R. I.

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S.S.WHITE ELASTOPLASTIC ALEMITE FITTING CAPS

They're FLEXIBLE
- *Easy on*
- *Easy off*
- *Stay put*

These inexpensive plastic caps prevent dirt from lodging on the tips of alemite fittings and being forced into the bearing when the grease gun is applied.

They're ideal for dirty or gritty operations. They're long lasting, retain their flexibility and are unaffected by oil, grease or gasoline.

Sizes for button head, zerk or hydraulic and ⅛" dot type fittings. For details and prices,

WRITE FOR BULLETIN P-5103

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

NEWS NOTES—Concluded

▼ BREVITY—Identify by IEN - 337 if you write the maker ▼

STEELS . . Machining instructions for stainless steels in 40-page manual

Armco Steel Corp.
701-5 Curtis St., Middletown, Ohio

Revised edition is announced for the company's manual, "Machining of Armco Stainless Steels". It lists grades with analyses, characteristics, cutting rates. Feeds and tool types are given by tables for lathes and screw machines.

▼ BREVITY—Identify by IEN - 338 if you write the maker ▼

STEELS . . How to select and use steel to make dies for plastic molding operations

Carpenter Steel Co.
351 W. Bern St., Reading, Pa.

Suggestions to the buyer of plastic molds, problems in tooling for plastics, answers to 22 common questions on the subject, are given at the start of new 40-page book, "Tooling Up for Plastics". This is followed by a selector chart of mold, steels, and a detailed presentation of the company's steels for making molds and hobs, including properties, heat treatment.

▼ BREVITY—Identify by IEN - 339 if you write the maker ▼

TRUCKS . . How to use them in material handling shown by application pictures

Clark Equipment Co.
Battle Creek 49, Mich.

Current issue of "Material Handling News", company's house publication, shows how to use power lift trucks and tractors in a plant. Application pictures start at the receiving dock, then to storage, through processing and assembly, into warehousing, and finally to shipping. You can request addition to your name to the mailing list to receive it.

▼ BREVITY—Identify by IEN - 340 if you write the maker ▼

TRUCKS . . How-it-works description of power lift truck and its internal construction

Towmotor Corp.
1224-28 E. 152nd St., Cleveland 10, Ohio

"What Makes It Tick?", new 36-page bulletin of pictures and condensed text, starts with the frame of the company's power lift truck, shows how it is made, then continues with a detail description of the engine, drive mechanism, lift mechanism, body, controls. It concludes with a picture review of models and accessories for a variety of purposes.

▼ BREVITY—Identify by IEN - 341 if you write the maker ▼

WELDING . . Recommended procedures for arc and torch welding with bronze rods

American Brass Co.
696-700 S. Main St., Waterbury 20, Conn.

New edition of 24 pages is announced for the company's Bulletin B-13, "Anaconda Welding Rods and Procedures". In it are described recommended procedures for welding by oxy-acetylene torch, metallic-arc, carbon-arc and inert-gas-shielded arc methods. There is a table of properties for copper, bronze, nickel silver, Everdur, phosphor bronze along with suggested welding method and use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 342 if you write the maker ▼

You Need It
IN YOUR PLANT

TO LIFT AND LUG HEAVY LOADS FASTER, EASIER... *It's Hydraulic!*

SERVICE HYDRAULIC *Lever Lift* TRUCK

What a Truck! Check These Points:
- Simple Hydraulic Lifting and Lowering Mechanism.
- Steel Deck Allowing Use With out Skids.
- 10" Front Wheels for Easy Rolling.
- Ball Bearing Turntable for Easy Steering.
- Accurate Control of Lowering Speed.
- Easy to Operate on Crowded Areas.
- Extra Stroke "a Power Stroke" No Bending.
- 50% Effort-Lift Heaviest Loads.
- All Welded Construction.

Sure it's needed—wherever there are loads up to 3 tons to move. Just back the Service LEVERLIFT under a skid. A few easy strokes lift the load. And easy-rolling wheels let you "take it away" with little effort. Available in capacities of 2500 lbs., 3500 lbs., 5000 lbs., and 6000 lbs. 26 different Platform sizes in each capacity. Steel, rubber or plastic wheels. *Write for descriptive Circular Today.*

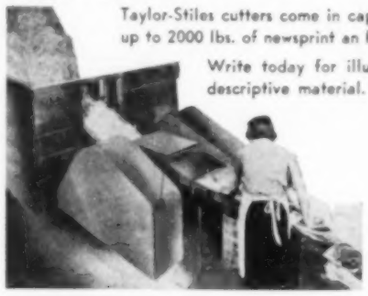
SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan
Plants at Albion, Michigan and Somerville 43, Mass.
Representatives in all Principal Cities

▼ BREVITY—Identify by IEN - 343 if you write the maker ▼

MAKE YOUR OWN PACKING
--- from waste paper --- to ship machine parts ---

You can ship machine parts in paper excelsior with a Taylor-Stiles cutter. You can cut up your waste paper, newsprint, and boxboard.



Taylor-Stiles cutters come in capacities up to 2000 lbs. of newsprint an hour.

Write today for illustrated descriptive material.

TAYLOR-STILES and Company
CUTTING MACHINES & KNIVES

44 Bridge Street
Riegelsville, New Jersey

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Norgren MICRO-FOG LUBRICATORS

RELY ON ACE PRECISION NYLON BALLS FOR EXACT CONTROL

SIZES 1/8"–3/4"
TOLERANCES ±.001

C. A. Norgren Co., Denver, Colorado, uses Ace Nylon Balls as feed tube checks in Micro-Fog Lubricators to provide instant oil flow.

Request samples and bulletin TODAY!

Ace Nylon Balls of Du Pont Nylon FM #10001 are mass produced to close tolerances giving you the advantages of toughness at low temperatures, form stability at high temperatures, light weight, chemical and abrasion resistance.

Hundreds of Industrial Applications! Let our engineers advise you.

ACE PLASTIC COMPANY
Precision Plastic Fabricators

91-24 Van Wyck Blvd. • Jamaica 2, N. Y.

▼ BREVITY—Identify by IEN - 345 if you write the maker ▼

NEW! ISLAND PALLET DOLLIES

HANDLE WITH EASE

cut Loading Time in half

TAKE over where fork trucks leave off . . . at the Truck or freightcar door. Island Pallet Dollies have staggered bottom rollers to eliminate trouble from floor racks. Built to handle your pallets. All parts are standard equipment. Write for Bulletin RTD-1A. Dept. IE-1.

ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, N. Y.

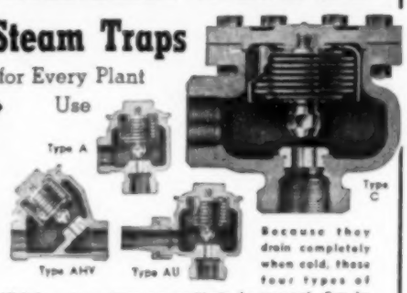
▼ BREVITY—Identify by IEN - 346 if you write the maker ▼

NICHOLSON MAKES

FREEZE-PROOF

Steam Traps

for Every Plant Use



Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 6 times average drainage capacity results in minimum heat-up time. The non-air binding feature of Nicholson traps also notably facilitates heat transfer in severe weather.

Size ¼" to 2"; pressure to 225 lbs.

BULLETIN 450
159 Oregon St., Wilkes-Barre, Pa.

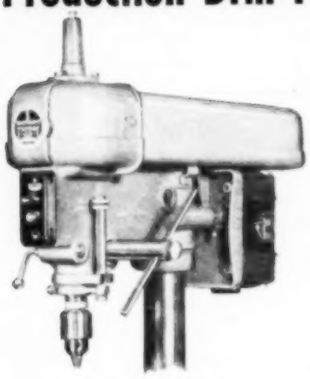
W. H. NICHOLSON & CO.

TRAPS · VALVES · FLOATS

▼ BREVITY—Identify by IEN - 347 if you write the maker ▼

For **Faster,** more efficient production

NEW WALKER-TURNER Production Drill Presses



Designed for fast, accurate production drilling, Walker-Turner's Production Drill Presses may provide a low-cost solution to your production problem. 72 different models. Heads adaptable to hundreds of diversified uses.

See them at your Walker-Turner Distributor's. Or send for complete information.

General Specifications

SPINDLE TRAVEL: 4" or 6".

FOUR SPEEDS: 600, 1250, 2440 and 5000 R.P.M. using a 1740 R.P.M. motor.

CAPACITY: Bench Models — 12" chuck to table, 17½" chuck to base. Floor Models — 39½" chuck to table, 46" chuck to base. All models 7½" center of chuck to column. Drills to center of 15" circle.

CHUCK: #6A Jacobs key type capacity 0 to ½" on production models.

TABLE: 10" x 12¼" machined working area.

BASE: 10" x 9" machined working area on Bench Models. 11" x 9" machined working area on Floor Models.

SPINDLE: Six spline full floating type, ⅝" diameter, male #33 Jacobs taper for No. 6A Jacobs Chuck, or #1 Morse taper socket (optional).

PULLEY: Straddle mounted on two ball bearings for extra rigidity. New upper mounting permits quick belt changing.

COLUMN: Ground seamless steel tubing, 2¼" in diameter.

SOLD ONLY THROUGH AUTHORIZED DISTRIBUTORS

WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

DRILL PRESSES • RADIAL DRILLS • TILTING ARBOR SAWS • BELT and DISC SURFACERS • METAL-CUTTING BAND SAWS • SPINDLE SHAPERS • JOINTERS

▼ BREVITY—Identify by IEN - 349 if you write the maker ▼

ELEVATOR . . Double well assembly of company's standard scaffold parts

Source: WILSON-ALBRECHT CO.
3561 Wooddale Ave., Minneapolis 16, Minn.

Erects on job

New elevator, known as the Waco material hoisting tower, is made up of the company's standard scaffold parts with a power unit employing a 3-hp. motor or a 6-hp. gasoline engine. Hoisting speed is 100 fpm. with the engine, 110 fpm. with the motor. Each load platform rates 1,000 pounds. The double-well unit is designed for simultaneous loading and unloading at the top or bottom of alternate wells.

A retarding brake in the drive assembly governs descending speed. A safety slack brake sets automatically in the event of failure in the hoisting rig. In either the engine or motor drive, the drum capacity is 500 ft. of ¼-in. steel cable.

▼ BREVITY—Identify by IEN - 350 if you write the maker ▼

CONSTRUCTION . . Form liner absorbs water, air from wet concrete

Source: CELOTEX CORP.
122 S. La Salle St., Chicago 3, Ill.

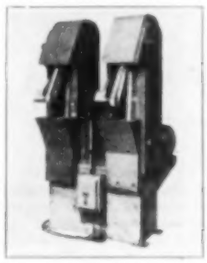
Use assures smooth surface

Cane fiber board is felted to a predetermined density and then is surface impregnated with a compound to control rate of air and water absorption in the company's new Absorptive Form Liner. The material is supplied in sheets measuring 4 by 8 ft. in width and length, by ⅜ in. in thickness. It is employed to face a standard concrete form. It is peeled off and discarded when the forms are stripped.

▼ BREVITY—Identify by IEN - 351 if you write the maker ▼

GRINDING . . Abrasive belt machine to grind and polish contour surfaces

Source: PRODUCTION MACHINE CO.
410 Wells St., Dept. IEN, Greenfield, Mass.



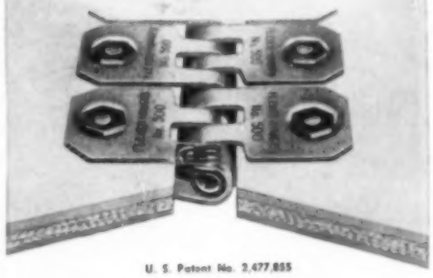
Abrasive belts, measuring 115 in. in length and to 4 in. in width, are motor driven at 5,000 fpm. in this new machine. The belts ride on 3-in. contact wheels on which they make a 180-deg. wrap. The wheel spindles are mounted on arms that can be positioned and locked at various angles. The machine is designed particularly for use on the contour surfaces of turbine blades. Both single and duplex assemblies are included.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 352 if you write the maker ▼

. . . the new separable

FLEXCO HINGED BELT FASTENERS



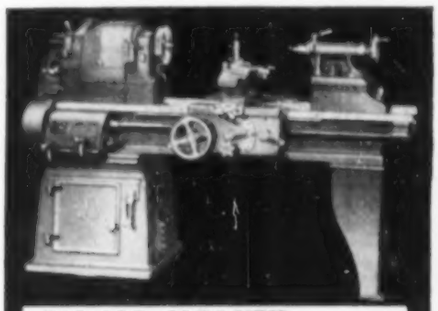
U. S. Patent No. 2,477,855

- For joining underground extension conveyors.
- A FLEXCO fastener that is HINGED. Has removable hinge pin.
- Troughs naturally, operates smoothly through take-up pulleys.
- Strong, durable . . . pull or tension is distributed uniformly across joint.
- For conveyor belts ⅛" to ½" thick.

Order From Your Supply House. Ask for Bulletin HF 500.

FLEXIBLE STEEL LACING CO
4610 Lexington St., Chicago 44, Ill.

▼ BREVITY—Identify by IEN - 353 if you write the maker ▼



BIG-JOB CAPACITY ALL-JOB ACCURACY

SOUTH BEND 16-24" LATHE

Designed for handling large diameter, medium-weight work, this lathe provides the capacity for many over-size jobs. It also gives you the advantage of efficiently and accurately machining routine collet, chuck and between-centers work. This exceptional versatility will make your equipment dollars go further. *Write for literature.*

SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

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Kester Soldering FLUX

62 DIFFERENT FLUXES to meet Your Requirements

Kester makes a flux for every soldering operation because modern efficiency demands the correct flux for the job. Consult Kester's Technical Department on any flux problem.

Free — Technical Manual, "Solder and Soldering Technique"

Liquid Fluxes — Soldering Salts and Paste

KESTER SOLDER

KESTER SOLDER COMPANY
4211 Wrightwood Avenue, Chicago 39, Ill.
Factories also at
Newark, New Jersey • Brantford, Canada

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STRIPS WIRE CLEAN

IN 2 SECONDS!

IDEAL Stripmaster

(Patent Pending)

6 MODELS —for all wire gauges 8 to 22—Also POTS —FM and TV down lead wires.

Easier, Faster—No Cut Fingers! . . . One Light Squeeze Strips Clean . . . Can't Crush Wire. Unique in design—unique in performance! One easy squeeze strips up to 7/8 in. Exclusive "automatic" feature holds jaws open while wire is removed — positively prevents crushing. Just insert wire, squeeze and release! Weighs only 10 oz. — fits in pocket. Blade can be changed in a jiffy! See the Stripmaster at your IDEAL Distributor's or mail coupon below.

SOLD THROUGH AMERICA'S LEADING DISTRIBUTORS

OTHER WIRING TOOLS
- ☐ Voltage Testers
- ☐ Fish tapes, reels and pullers
- ☐ Joist Borers
- ☐ B-K cutters
- ☐ Fuse clip clamps
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- ☐ Test lites

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois

Please send free catalog information on Stripmaster and other wiring tools as checked.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

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SHORT-CUT to IRREGULAR SHAPES

THE HEINRICH HEAVY-DUTY
HANDNIB
A HAND-OPERATED COMBINATION NIBBLING, SHEARING, PUNCHING AND ROD CUTTING MACHINE.
(With Swivel Base)

Capacity: Nibbling and Shearing 3/16" flat stock . . . Punching Holes up to ½" in ⅛" sheets . . . Rod Cutting 3/16", ¼", 5/16" and ⅜" round bars.

Ask for descriptive folder.
Prompt delivery.

THE NATIONAL MACHINE TOOL CO.
3536 CLARK STREET • RACINE, WISCONSIN

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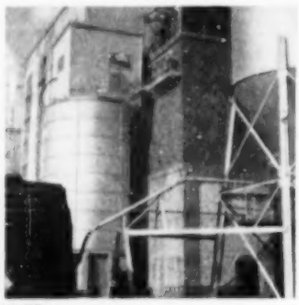
KEEP UNLOADING AND STORAGE COSTS DOWN



with The AIRVEYOR

This pneumatic conveyor offers many concrete savings for conveying dry pulverized, crushed, and granular materials. Reduced purchase price in bulk . . . cost of unloading and storing. Clean, dustless operation, rapid unloading, convenience in storing and reclaiming are just a few of the advantages of this pneumatic conveyor.

If you have a bulk materials handling problem, may we suggest you allow us to make a study of your conditions. We will be glad to submit our recommendations, based solely on your particular requirements. No obligation, of course. Write for literature on the Airveyor.

FULLER COMPANY, Catasauqua, Pennsylvania
Chicago 3—120 So. LaSalle St.
San Francisco 4—420 Chancery Bldg. A-116

Fuller
DRY MATERIAL CONVEYING SYSTEMS AND COOLERS • COMPRESSORS AND VACUUM PUMPS • FEEDERS AND ASSOCIATED EQUIPMENT

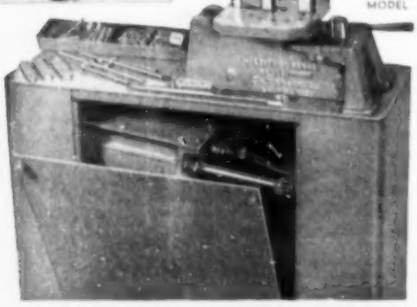
▼ BREVITY—Identify by IEN - 358 if you write the maker ▼

THE FAMOUS MULTIFORM **BENDER CUTTER**

Produces Without Special Tooling — Saves Die Costs Saves on Expensive Presses

The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade.

No. 5 AIR MODEL



FIVE-IN-ONE-TOOL—ALSO LARGER MODELS

Hand Operated Models Available

IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPE, CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

▼ BREVITY—Identify by IEN - 359 if you write the maker ▼

TESTING . . Pressure stand to check nozzles for diesel engines

Source: BACHARACH INDUSTRIAL INSTRUMENT CO.
7002 Bennett St., Pittsburgh 8, Pa.

Hand pump builds pressure

New assembly of the company's pressure stand for diesel-engine nozzles and injectors, previously described IEN-9692-50, permits checkup on an extended range of nozzles and injectors for Electro-Motive, General Motors, American Bosch, Bendix Scintilla, Fairbanks Morse, Ex-Cell-O, Adiro and Demco equipment as employed on medium and large-bore diesel engines in a variety of applications.

Equipment includes holding fixtures, the company's nozzle-test pump for hand-lever operation and suitable fuel-line connectors. Test can be made for leakage at the nozzle or its connections as well as for pressure and spray pattern.

▼ BREVITY—Identify by IEN - 360 if you write the maker ▼

TRUCK . . Engine driven fork lift is powered by Hercules 44 hp. diesel

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.

Burns oil

New assembly of the company's Yardlift-40 fork truck is available with a Model DIX-4D Hercules diesel engine. It develops 44 hp. at 1350 rpm. The engine can be specified in place of the previous standard gasoline power unit. In other respects the truck does not change from its previous design.

Turning radius is 85½ inches. Overall width is 41¾ inches. Application is not subject to limitations of truck equipment in which an ignition system is required is not completely spark proof.

▼ BREVITY—Identify by IEN - 361 if you write the maker ▼

SILICONES . . What they are and how they are used described in bulletin

General Electric Co.
101 Plastics Ave., Pittsfield, Mass.

"The Silicone Story" is a new 24-page picture book which describes applications of these materials under resistance to high and low temperatures, release from sticking, unusual surface characteristics, inertness. You may be interested to see the many ways in which they can be used. Ask for a copy of Bulletin CDC-193 when you write.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 362 if you write the maker ▼

HOW TO IMPROVE YOUR PRODUCTS AT LOW COST

PERMACLAD
STAINLESS CLAD STEEL
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.
Over 133 Years of Iron and Steel Making Experience

Other Products: A.W. ALGRIP Abrasive Floor Plate • A.W. SUPER DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)

▼ BREVITY—Identify by IEN - 363 if you write the maker ▼

It's Here . . . a Great NEW **APPLETON REELITE**

Announcing the new, *all new*, Appleton 75 Portable Reelite—a compact, automatic cord take-up reel that furnishes light—or a flexible power source for electrical devices—when and where you want it.

Positive stop action holds cord at desired length; cord is automatically re-reeled when job is done. Installs easily on 4" octagonal outlet box. Available with six types of handlamp, machine tool connector body or key socket. Vaporproof model furnished complete with handlamp. Write for full details.

Sold Through Electrical Wholesalers

APPLETON ELECTRIC COMPANY
1716 Wallington Avenue • Chicago 13, Illinois

APPLETON
CONDUIT FITTINGS • LIGHTING EQUIPMENT • OUTLET AND SWITCH BOXES
EXPLOSION PROOF FITTINGS • REELITES

▼ BREVITY—Identify by IEN - 364 if you write the maker ▼

COMPARE THE RESULTS you can get from these FREE samples of amazing DRIPRINT paper!

SAMPLES

Write on your company letterhead for stock samples, sent without obligation.

DIETZGEN
DRIPRINT
TRADE MARK

Better, ready-to-use direct positive prints are yours in seconds with DRIPRINT

Whether you want prints with black, blue, red or sepia lines, you'll get better results with DRIPRINT. Made directly from your translucent original without a negative, these superior Dietzgen ammonia-process prints on paper or cloth give you denser, sharper lines on pure white backgrounds every time.

Lines are fade-proof, too, even in strong sunlight, oil, perspiration. And these prints are tough, fight repeated folding, wear, tear. Thus DRIPRINT is permanent two ways.

You can draw or write on DRIPRINT with pen, pencil or water color; and print lines can be removed instantly with DRIPRINT Eradicator Fluid. So notations, additions, alterations are easily made. Try DRIPRINT.

EUGENE DIETZGEN CO. • Chicago • New York • San Francisco
New Orleans • Pittsburgh • Los Angeles • Philadelphia
Washington • Milwaukee • *Dealers in All Principal Cities*

DIETZGEN
EVERYTHING FOR DRAFTING SURVEYING & PRINTMAKING

Free Samples!

▼ BREVITY—Identify by IEN - 366 if you write the maker ▼

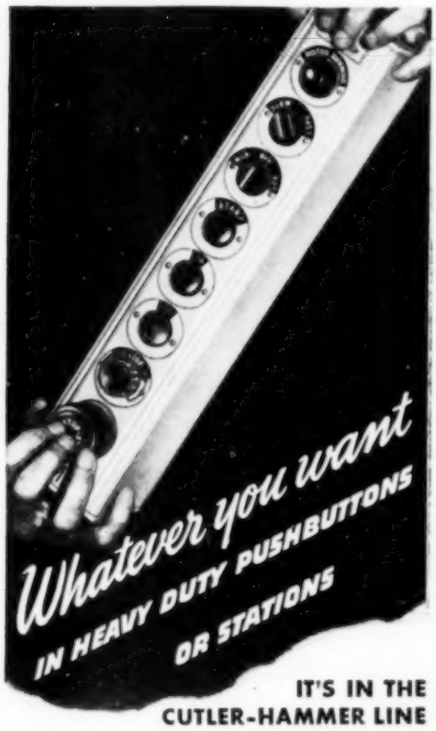
now only $37.50

- Heavy Base and Clamp
- Heavy Rubber Cord
- 2 Push-Pull Propellers
- 36" Stainless Steel Shaft

PAYS FOR ITSELF IN LESS THAN ONE WEEK

STANDARD ELECTRIC
MANUFACTURING CO., INC.
110 HADDON AVE., WEST BERLIN, NEW JERSEY

▼ BREVITY—Identify by IEN - 367 if you write the maker ▼



IT'S IN THE CUTLER-HAMMER LINE

The Cutler-Hammer Line of Heavy Duty Pushbuttons and Stations offers you every type of operating element, every type of station, every type of circuit combination. With this broad range, the free interchangeability and the flexibility of this line, you are able to get just the heavy duty pushbutton equipment you need, instead of putting up with unsatisfactory makeshifts.

This line has been engineered from the start for such broad coverage of needs . . . through the development of a fundamentally correct contact mechanism capable of being incorporated into diversified types of elements.

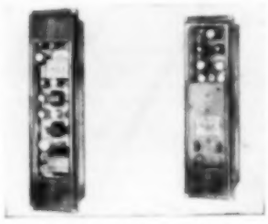
Among the advantages offered by this line are complete interchangeability, uniformity of design and performance, exceptionally long life, ease of installation through visible contacts which facilitate circuit identification and terminals which are unusually large and accessible. All basic elements are Underwriter-approved. CUTLER-HAMMER, Inc., 1378 St. Paul Ave., Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ont.

CUTLER-HAMMER
MOTOR CONTROL
C-H

▼ BREVITY—Identify by IEN - 369 if you write the maker ▼

METER . . Electronic equipment telemeters variables from remote point

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.



Detailed in Bulletin 41-810

Type IT-1 transmitter to the left in the illustration and Type IR-1 receiver to the right are new units in the company's Freq-O-Tron telemetering equipment. Readings can be made, transmitted and received of any variables that are convertible to a proportional dc. millivolt equivalent. Response is essentially instantaneous. Installation can be made over any distance when employing a suitable telegraphic channel such as a pilot wire, power line carrier or radio. Recorders or indicators can be installed at transmitting, re-transmitting and final receiving stations.

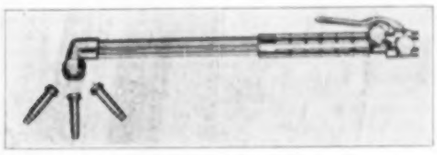
The five-step operation includes primary measurement, conversion from millivolts to frequency, transmission, converting from frequency to millivolts, indicating or recording or both. The transmitter is an electronic generator with an output frequency proportional to an applied millivolt quantity. It operates on a null-balance principle and is insensitive to linearity or variations in tube characteristics, temperature or power supply.

The receiver is an electronic converter that turns the transmitted signals back to dc. millivolts proportional to the applied frequency. It can be connected directly to a pilot-wire circuit or to suitable electronic channel equipment. Its accuracy is not affected by the shape of the input signal wave.

▼ BREVITY—Identify by IEN - 370 if you write the maker ▼

CUTTING . . Oxy-acetylene torch mixes oxygen and acetylene in the head

Source: DOCKSON CORP.
3845 Wabash Ave., Detroit 8, Mich.



Controlled at palm valve lever

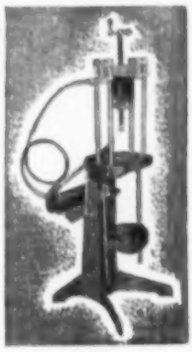
Model D Hi-Speed is a new cutting torch in which oxygen and acetylene are mixed in the head and the added weight at this point, as a result of the design, is employed to "balance" the torch weight. Total is 39 ounces. Cutting capacity in steel is from light gage to 10 in. in thickness.

The head and valve block are made of forged bronze. The connecting tube is seamless cupro-nickel for the high-pressure oxygen, bronze for the low-pressure oxygen and fuel lines. Copper tips, in sizes from No. 0 through No. 8, apply in the head by means of flat-to-flat coupling in place of the customary cone-shaped tapered seat. Impregnated washers seal the connections against gas leakage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 371 if you write the maker ▼

▼ BREVITY—Identify by IEN - 372 if you write the maker ▼



new OTC POWER-TWIN

PORTABLE PEDESTAL PRESS

An amazingly efficient portable pedestal press, which combines with the Power-Twin Hydraulic Ram to perform tough jobs easily and quickly.

STRONG. Handles 95% of all pulling or installing jobs. Especially designed for use with OTC 1½ ton Hydraulic Puller.

AMAZINGLY PRACTICAL for all production, assembly line and maintenance operations.

PORTABLE OR PERMANENT. Easily moved from job to job or located near permanent equipment.

COMPACT. Base is only 20 x 21 inches.

VERSATILE. Provides almost unlimited vertical adjustment for pulling or installing wheels, pulleys, bushings, collars, couplings, gears, shafts and bearings.

POWER-TWIN HYDRAULIC BENCH PRESS

Bench frame available for use with OTC Power-Twin Center-Hole Hydraulic Ram. Provides compact, inexpensive hydraulic press for mounting on bench for use in shop—or service truck for use on the job.

See your jobber for complete information or write us.

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINNESOTA

▼ BREVITY—Identify by IEN - 373 if you write the maker ▼

Whatever your sanding problem...in wood, metal, plastic

...there's a Sundstrand Air Sander to solve it!

SUNDSTRAND SANDERS WITH STRAIGHT-LINE ACTION ARE WIDELY USED FOR:

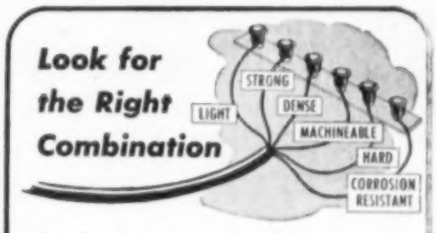
- Wood finishing . . . building materials, furniture, cabinets, wood parts, etc.
- Plant production and maintenance work.
- Finishing metal parts.
- Plastic and glass finishing.
- Truck, car and machinery refinishing.
- Cleaning purposes . . . vats, bins, and other containers.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

▼ BREVITY—Identify by IEN - 374 if you write the maker ▼

Look for the Right Combination



A good product may be made better, or a process less expensive when you select a material with the right *combination* of electrical, mechanical, and chemical qualities.

Synthane is a material that has this *combination*. Strong, light, hard and dense, it is easily machined on standard equipment. Corrosion and moisture resistant, Synthane also possesses excellent electrical properties such as high dielectric strength, low power factor and low dielectric constant.

You can find out more about Synthane's possible place in your product or process by mailing the coupon below. Why not do it today?

TECHNICAL PLASTICS
SHEETS • RODS • TUBES
FABRICATED PARTS
SYNTHANE
MOLDED-LAMINATED
MOLDED-MACERATED

SYNTHANE CORPORATION
South River Road, Oaks, Pa.
Please send me a copy of the complete Synthane catalog.
Name_____
Firm_____
Address_____
City_____ State_____

▼ BREVITY—Identify by IEN - 375 if you write the maker ▼

LANCO

HAS THE ANSWER TO YOUR

"ENDLESS CHAIN"

MATERIAL HANDLING TRUCK PROBLEM

Overhead or underfloor tow, platform dimensions, superstructures, wheel size and material . . . all of the factors involved in developing efficient trucks for Endless Chain conveying systems can be answered by Lanco trucks. Lanco trucks, custom built from standard components, assure you of complete efficiency at an economical cost.

LANSING CO. LANCO MATERIAL HANDLING EQUIPMENT — LANSING, MICHIGAN

▼ BREVITY—Identify by IEN - 376 if you write the maker ▼

ARE YOUR PLANT AND FACILITIES BURIED?

Model 218

Plants and machinery buried in dirt and debris won't meet our country's increasing production demands. Keep your plant clean at all times. Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.

2233 Stevens St., S. W. Grand Rapids 7, Michigan

▼ BREVITY—Identify by IEN - 377 if you write the maker ▼

FOLEY FILED SAWS Pay big dividends . . . . . HERE!

Only the best saw sharpening can give you top-good production. The Foley Saw Filer quickly sets old saws with dull and irregular teeth back to perfect condition—and keeps them perfect! 25% to 40% increase in production is frequently realized with Foley-filed saws.

ONE machine files crosscut circular saws, band saws, hand saws.

30 DAY TRIAL OFFER permits you to use a Foley Saw Filer in your own shop. You can't lose on this offer—write or send coupon.

FOLEY Automatic SAW FILER

FOLEY MFG. CO. 3369 N. E. Fifth St. Minneapolis 18, Minnesota

Please send literature and details of your 30-DAY TRIAL OFFER.

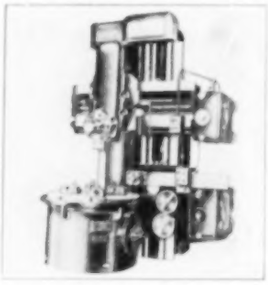
Name

Address

▼ BREVITY—Identify by IEN - 378 if you write the maker ▼

BORING . . Vertical machine mounts 39 to 63 in. motor-driven table

Source: COSA CORP.
626 Chrysler Bldg., New York 17, N. Y.



18 speeds, 12 feeds

Froriep trade names line of vertical boring and turning mills being made in Europe and now available in the United States for general machining application. Four sizes are included in the line, each with a cross-rail slide head and a side-arm head. Individual controls are provided for feed and rapid traverse in vertical and horizontal movements. Feed or return is engaged by a single lever at the operator's position. The machine is available to specification for thread cutting, taper turning and for operation in connection with tracer control.

▼ BREVITY—Identify by IEN - 379 if you write the maker ▼

FILTERING . . Cartridge type unit for non-corrosive liquids in a line

Source: MARVEL ENGINEERING CO.
623-27 W. Jackson Blvd., Chicago 6, Ill.

Monel Metal mesh

Two sizes rating 75 and 100 gpm. have been added to the company's cartridge-type filtering unit, previously described IEN-3386-50 in a size range from 5 to 50 gpm. The 75-gpm. filter measures 6 in. in diameter by 12½ in. in overall height. The unit rating 100 gpm. measures 6½ by 14 inches. Both are available in the sump design shown in the illustration or in a housing equipped with inlet and outlet connections horizontally at the top.

Filter mesh size can be specified between 30 and 200 per inch. The unit is particularly suited for use in hydraulic fuel and lubricating lines. Pressure rating is to 125 pounds. A dirty element can be cleaned and returned to service.

▼ BREVITY—Identify by IEN - 380 if you write the maker ▼

WELDING . . Suggestions on design and methods of welding parts in new book

Eutectic Welding Alloys Corp.
40-42 172nd St., Flushing 58, N. Y.

New Fourth Edition is announced for the company's "Manual of Welding Design and Engineering". It is a 72-page book, available upon request, that covers such topics as joint design, methods of heating, welding procedures, available materials. It includes selector charts for the company's materials, picture examples of methods and work.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 381 if you write the maker ▼

CASTECC LOCKTITE HOLDER AND IMPORTED LEAD

—the "team" that simplifies your drawing and designing

REFILL DRAWING PENCIL

(black or colored)

Patented clutch holds lead in grip of iron. With push-button release, your fingers never touch the lead. Prevents slipping, smearing, smudging.

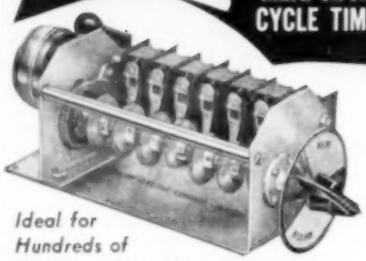
No. 9030 CASTELL REFILL IMPORTED Drawing Leads Degrees 7B to 9H

Perfect for LOCKTITE and usable in all other standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

AW FABER-CASTECC

▼ BREVITY—Identify by IEN - 382 if you write the maker ▼

For Immediate Delivery.... The NEW **ZENITH Multi-Circuit CYCLE TIMER**



Ideal for Hundreds of Electrical Operations

Specially designed to accurately time any operation — for electrical display signs, industrial furnaces, electrical appliances, laundry equipment and dry cleaning machinery. The Multi-Circuit Cycle Timer and other Zenith units will also solve many laboratory timing problems. May be set for on and off periods with as many circuits as desired . . . can be furnished without synchronous motor for elevator control, limit switch and similar operations. Available now!

For information on volts, cycles and circuits as well as prices—send for illustration Bulletin No. 142.

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

▼ BREVITY—Identify by IEN - 383 if you write the maker ▼

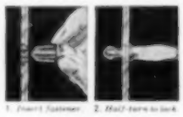
This fastener works through thick and thin!

Spring-Lock works whether panel thicknesses run over or under specifications! Spring wire deflects automatically to handle greater or lesser thicknesses. Spring-Lock's design flexibility makes it more than a fastener: it can be adapted as a shelf support, door strike, knob or any similar panel-mounted device. Many standard shapes and sizes of Simmons Spring-Locks are available from stock.

SIMMONS FASTENER CORPORATION
1780 North Broadway, Albany 1, N. Y.

Spring-Lock • Quick-Lock • Roto-Lock

HERE'S HOW SPRING-LOCK WORKS



1. Insert fastener 2. Half-turn to lock

- **Installation is BLIND**
- **Installation is EASY: no special tools are needed**
- **Installation is QUICK: a half-turn locks it in place**
- **Installation is SECURE: the *spring* steel *locks* the fastener, resists vibration**

Send for details and samples, or write us about your fastening problem.

▼ BREVITY—Identify by IEN - 384 if you write the maker ▼

Don't spoil it- KROIL it!

Don't ruin a valuable piece of equipment merely because some part is rusted tight. Apply Kroil, the amazing new chemical lubricant that creeps into millionth inch spaces (proved by laboratory tests), dissolves rust, supplies necessary lubrication and

LOOSENS FROZEN PARTS

9000 of America's leading plants can't be wrong! They used KROIL during the last war and are still depending on it to save expensive labor and valuable parts. They say: "Kroil loosened bushings after a 12-ton press had failed" . . . "on repairing heat treat trolleys formerly destroyed every nut. Now Kroil saves them all, and time, too" . . .

You too should be using KROIL every day. Try it on money-back basis. Gallon $3.50; with Kroiler trigger squirt gun (shoots a drop or a stream 15 feet, if desired) $4.75, f.o.b. our factory.

KANO LABORATORIES 1071 S. Thompson Lane Nashville 11, Tenn.

▼ BREVITY—Identify by IEN - 385 if you write the maker ▼

CHEMELEC MULTI-BOND

X. Pure Dielectric Material
Y. Multi-Bond Area
Z. Conducting Metal Surface

Metal Faced TEFLON*

Here is the answer to the bonding and hermetic sealing of dielectric materials to metal components.

Chemelec Multi-Bond is metal-faced pure or filled TEFLON, produced by an exclusive (patents pending) method of uniting fluorocarbon resins and metals with an interlocking bond unaffected by severe mechanical shock, vibration and unequal rates of thermal expansion.

The bond is micro-crystalline in structure and gradually changes from dielectric to metal, the conducting metal surface being applied by electro-deposition or other conventional means.

Facing metals include practically all the ferrous and non-ferrous metals, the ferro magnetic group and the precious metals.

Sheets are available, metal faced on one or both sides, in thickness from .034 to 1.75 in. and in sizes up to 36 in. square. Write for Bulletin MI-424.

*du Pont's trademark for its tetrafluoroethylene resin.

UNITED STATES GASKET COMPANY

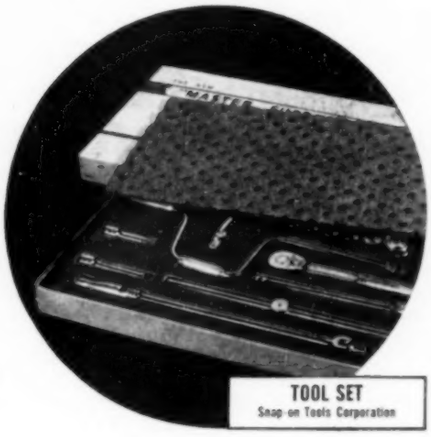
FLUOROCARBON PRODUCTS DIVISION

658 N. 10TH STREET, CAMDEN, N.J.

FOREMOST FABRICATORS OF "TEFLON" AND OTHER FLUOROCARBON PLASTICS

▼ BREVITY—Identify by IEN - 386 if you write the maker ▼

Kimpak* Float Packaging



TOOL SET
Snap-on Tools Corporation

Cuts shipping costs – reduces damage in transit!

Do you handle your product with extreme care during the manufacturing process—then trust it to outmoded, inferior quality cushioning materials after it leaves your shipping room? You may not be able to answer that question if you haven't seen KIMPAK* Float Packaging at work.

It's the modern way to ship anything from delicate glassware to furniture and appliances; from tools and hardware to flowers and food. It's also one of the most efficient packaging methods in the world—giving optimum protection at minimum cost.

KIMPAK creped wadding is as neat, clean and easy to apply as wrapping paper. It's designed to absorb continuous vibration, ward off severe shocks, cushion and defend your product against toughest handling. This highly efficient cushioning material protects the finest finish from scratching, bruising, pressmarking and "burning."

Call your KIMPAK distributor today for further information, or write to Dept. IEN, Kimberly-Clark Corporation, Neenah, Wisconsin.

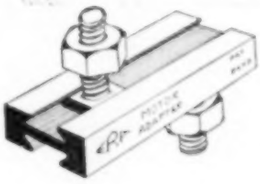
Kimpak
REG. U.S. PAT. OFF. & FOREIGN COUNTRIES
CREPED WADDING

*REG. U. S. PAT. OFF. & FOREIGN COUNTRIES

▼ BREVITY—Identify by IEN - 388 if you write the maker ▼

FASTENING . . Motor base adapter secures electric motor to off-size base

Source: ENGINEERING RESEARCH ASSOCIATION
3473-77 E. 9 Mile Road, Hazel Park, Mich.



For motors to 3 hp.

Two T-bolts ride in slots on opposite faces of the flat member in this new adapter plate. One bolt secures the plate to a motor base. The other bolt secures the motor foot. The plate provides a means to compensate for difference in center-line dimension between the motor and motor base so motors can be changed quickly on bases that do not fit exactly. A set of the adapters provides a difference in dimension to 3 inches. Thickness is small enough so the motor height is not materially changed.

▼ BREVITY—Identify by IEN - 389 if you write the maker ▼

PAINTING . . Rubber base liquid for interior use is alkali resistant

Source: TRUSCON LABORATORIES
1699 Caniff St., Detroit 11, Mich.

Color card available

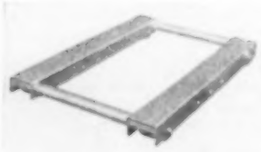
Paratex trade names new rubber-base paint for application over brick, concrete, building boards, lime plaster and on previously painted as well as unpainted building interiors.

Application is by brush, roller or spray using the material as supplied without thinning except when excessive evaporation has taken place. Then a small amount of mineral spirits can be added. The paint is available in a range of colors with which light colors will hide out dark walls and dark colors will blot out light colors without noticeable "show through."

▼ BREVITY—Identify by IEN - 390 if you write the maker ▼

TRUCK . . Multiple roller dolly to carry pallets over slatted floors

Source: SAMUEL OLSON MFG. CO.
2420-22 Bloomingdale Ave., Chicago 47, Ill.



It bridges the cracks

Steel rollers with grease-lubricated sealed ball bearings are mounted on hexagonal shafts to support this new channel-frame dolly. It has been designed particularly to handle loaded pallets into and out of refrigerator cars over slatted floors.

Frame size ranges from 30 in. in length by 24 in. in width to 48 in. in both dimensions. Load capacity with four rollers is 1 ton in the standard design. Each standard unit is machined to take 6, 8 or 10 rollers for load ratings to 2½ ton. Weight with four rollers is about 36 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 391 if you write the maker ▼

ARE YOU FUMING OVER FUMES?

Belt Driven Duct Fan. Powered by Recognized Accepted Make Motors. Propeller Pitch Adjustable. High Tensile Strength Cast Aluminum Blades.

BELT DRIVEN DUCT FANS. For spray booths, volatile or explosive fumes, excessive temperatures, dust or any operation requiring the motor to be out of the air stream.

JOB fitted DUCT FANS in sizes from 14" to 72" in diameter and from 1000 to 100,000 C. F. M.

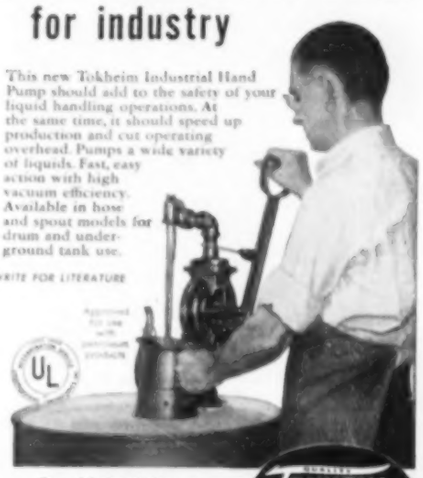
Utility Man Cooler
Portable Man Coolers
Roof Ventilators
Duct Type Fans
Duo Duct
Direct or Belt Driven

Represented in All Principal Cities
Write Dept. 102 for Complete Catalog

THE HARVEY P. BERTRAM CO.
1008 W. Ninth St. Cincinnati, Ohio

▼ BREVITY—Identify by IEN - 392 if you write the maker ▼

SAFER liquid handling for industry



This new Tokheim Industrial Hand Pump should add to the safety of your liquid handling operations. At the same time, it should speed up production and cut operating overhead. Pumps a wide variety of liquids. Fast, easy action with high vacuum efficiency. Available in hose and spout models for drum and underground tank use.

WRITE FOR LITERATURE

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
1654 Wabash Ave., Fort Wayne 1, Ind.
Factory Branch: 1309 Howard St.
San Francisco 3, California

TOKHEIM DOUBLE ACTION HAND PUMPS

▼ BREVITY—Identify by IEN - 393 if you write the maker ▼

Built-in as an inherent part of the product, Klixon Thermo-Snap Controls give you accurate, dependable temperature control. Actuated by the scientifically calibrated Spencer Disc, they open the circuit with a clean break, close the circuit to a solid make. Their accurate, sensitive operation is best able to withstand shock, vibration, altitude or motion. Small and compact, they are easily adapted to your designs. Klixon Thermo-Snap Controls are available in many types and ratings including hermetically-sealed units.

Military and commercial applications include use as — low limit and high-limit controls, fuel delay switches, purge switches, temperature controls, fan switches, tube and rectifier cooling controls in products ranging from tanks and aircraft to radio and electronic equipment and household appliances. Investigate Klixon Thermo-Snap Controls for your products. Our engineers will gladly help you with your temperature control problems. Write for their help and information, today.

KLIXON SPENCER THERMOSTAT
Division of Metals & Controls Corp.
201 FOREST ST., ATTLEBORO, MASS.

▼ BREVITY—Identify by IEN - 394 if you write the maker ▼

Handy . . . . .

when converting part of plant to war production

NEW HEIN-WERNER "PUSH and PULL" HYDRAULIC JACK

operates at *any angle* and in *any position!*

Even with ram in close quarters, the six feet of hose connecting ram with pumping unit permits free and easy operation of jack. Great for lifting, pushing, pulling, pressing, spreading and clamping jobs.

Available in 4, 10 or 20 ton capacities, with a wide range of attachments.

Hein-Werner also manufactures a complete line of Hydraulic Industrial Jacks in models of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity. See your industrial supply distributor, or write us.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORPORATION • WAUKESHA • WIS.

BREVITY—Identify by IEN - 395 if you write the maker

A TOOL BOX AT YOUR FINGERTIPS

INTERCHANGEABLE COUNTERBORE SETS

Continental Interchangeable Counterbore sets give you a wide variety of cutting tools in a compact, convenient form. Three sets are available, for the large or small toolroom. Each set features the famous Continental indestructible drive that will not stick, will not break, and is always hand detachable. Full details are given in Bulletin D27161. Send for your copy.

CONTINENTAL TOOL WORKS
Division of Ex-Cell-O Corporation
Detroit 32, Michigan

CTW

BREVITY—Identify by IEN - 396 if you write the maker

Fast, Safe PACKING FOR MILITARY MATERIEL

Now available for efficient, cost-saving packing of shells, cartridges, fuses and other military material, are American pre-assembled interlocking partitions made to meet government specifications.

Write for prices on your requirements.

Volume production facilities.

American PARTITION CORPORATION
3043-N. 30TH ST. UPTOWN 3-5100 MILWAUKEE 10, WIS.
Eastern Plant and Sales Office: Bound Brook, New Jersey
Bound Brook 9-3100
Western Representative: Seaman Hastings Co. — Ephrata 3-3244
Merchants Exchange Building, San Francisco 4, Calif.
Midwest Sales Representative
5070 Milwaukee Ave., Chicago 30, Ill. — Monroe 6-7400

BREVITY—Identify by IEN - 397 if you write the maker

Engineering Data

Complete, concise, practical . . . dealing with the application of SYNCHRON timing motors, time machines, gear trains, and D.C. motors for special timing jobs.

To Help You

solve your timing problems, adapting standard timing machines or designing new.

Design for Defense

Hansen D.C. Motors powered Servo units in last World War. Improved products, and enlarged design and manufacturing facilities for precision production are available for defense contracts.

Pulls up to 3 oz. direct load at 1 R.P.M. Operates efficiently at -40° to +180°F. Available with gear trains to correct any speed.

SYNCHRON timing motors

HANSEN MANUFACTURING CO., INC., PRINCETON 2, INDIANA

Send catalog and engineering data to:

Name
Firm
Address
City Zone State

BREVITY—Identify by IEN - 398 if you write the maker

PROTECTING . . Pull back press guard keeps operator's hands out of danger

Source: POSITIVE SAFETY MFG. CO.
4403 Perkins Ave., Cleveland 3, Ohio

Pulls for safety

New design of the Posson press guard mounts on the floor in front of a press and is secured in relation to the press by a vertical rod and clamping device. The tubular upright member back of the operator carries a pivoted seat that can be adjusted vertically and also horizontally. Inside a perforated guard that can be locked is provision to adjust cable length. On the rod extending downward to the press ram to operate the cable is a length adjustment secured by solid pins held by a spring.

On the front of the press is a hanger on which the wrist fittings can be suspended when the operator is away from the press to remind him to replace them upon his return. This hanger will release if the press is stripped while the operator is not in position as required by the guard.

BREVITY—Identify by IEN - 399 if you write the maker

TIMING . . Electric clock prints work and worker records on card

Source: SIMPLEX TIME RECORDER CO.
51 Railroad Square, Gardner, Mass.

Prints on card face

Model 5000 is a new unit in the company's line of electric time-keeping equipment. It is available for vertical or horizontal printing on worker time cards. The unit provides two-color registration to show late arrivals and early departures in red. Printing takes place upon positioning the card in its slot at the top of the housing. Payroll periods and signals can be set for one-minute schedules. The type wheels are engraved phosphor bronze. Assembly is in a steel housing for wall mounting.

BREVITY—Identify by IEN - 400 if you write the maker

CONTROLS . . For steam power plant the subject of bulletin in technical article form

Hays Corp.
740-44 E. 8th St., Michigan City, Ind.

Modernization and expansion of the boiler room in a brewery is described by new 8-page Bulletin R-6, written in the form of a technical article by the brewery's Superintendent of Engineering. The article includes information on the Hays combustion-control equipment with a schematic diagram and photographs to show the set-up.

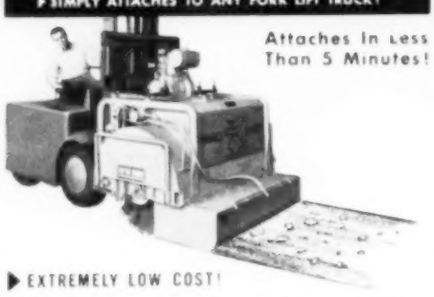
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 401 if you write the maker

ONLY THE "YARD BIRD"

▶ SWEEPS 100,000 SQ. FT. PER HOUR!
▶ SIMPLY ATTACHES TO ANY FORK LIFT TRUCK!

Attaches In Less Than 5 Minutes!



▶ EXTREMELY LOW COST!
▶ FOR LARGE AREA SWEEPING INDOORS OR OUT!
▶ HAS BUILT-IN SPRINKLER SYSTEM!

WRITE TODAY for prices, details on this inexpensive new-type powered sweeper which rapidly adapts your lift truck to large area sweeping. Provides ideal, fast clean-up for factories, warehouses, airports, aircraft plants, railroads, etc. Rugged 5.5 HP gasoline engine, easily-dumped floating dust pan. Simply adjusts for snow removal, too!

LITTLE GIANT PRODUCTS, INC.
1530 North Adams Street, Peoria 38, Illinois

BREVITY—Identify by IEN - 402 if you write the maker

New PRESS CONVEYOR

Now get greater flexibility in this new PORTABLE press conveyor. Adjusts quickly to desired angles. It is well balanced . . . easy to maneuver. This new portable press conveyor is designed to keep stampings and scrap on the move at lowest cost. Write today for all the facts.

ADJUSTS from horizontal to a 65° incline.

Model 96 - 6 ft. size
Model 98 - 8 ft. size

FREE — Illustrated Folder Just Off The Press. Write to . . .

CONVEYOR SPECIALTY COMPANY, INC.
35 Newport Avenue, North Quincy 71, Mass.
Belt Conveyors - Slat Conveyors - Gravity Conveyors - Reciprocating Lifts - "Unitable" Belt Conveyor - Unique Handler (Portable Pile) - Complete Package Handling Systems

BREVITY—Identify by IEN - 403 if you write the maker

KALMAN PROCESS *makes* CEMENT FLOORS *tougher!*

No chance for a "softie" when you specify Kalman floors. In surfacing, Kalman "absorption control" densifies and pre-shrinks the topping, producing concrete of the highest compressive value — a uniformly tough surface of maximum durability.

Bulletin gives all the facts — yours for the asking!

KALMAN FLOOR COMPANY
110 E. 42nd St., New York 17, N. Y.
Boston • Charlotte • Chicago • Cleveland
Dayton • Detroit • Houston • Los Angeles
Philadelphia • San Francisco

BREVITY—Identify by IEN - 404 if you write the maker

the *New* SAF-I-SPEC SAFETY SPECTACLE

Full Protection from Impact Hazards

- Smart Appearance
- Instant Snap-on Temples
- Genuine Comfort
- Rugged—Tough
- Optically Correct
- Low Cost
- Made of Optilite

Write for literature and prices

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MO. • BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada — PARMELEE LTD., 11 Watkinson Ave. — Toronto 9

▼ BREVITY—Identify by IEN - 405 if you write the maker ▼

it's paper

BUT IT PREVENTS "SLIPS" IN SHIPS

In cutting every plate in the hull of a ship to an exact fit, patterns made of a special Riegel template paper are laid down on the steel and outlined with chalk as a guide for the flamecutters. This special paper must have high dimensional stability, and be tough enough to be used over and over again, or stored for years.

It's another interesting example of Riegel's ability to make paper for almost any need. We now produce more than 600 grades, and we are constantly developing even more new papers for leading companies in many fields. Write us now for more information.

RIEGEL PAPER CORPORATION
P. O. Box 170 • Grand Central Station • New York 17, N. Y.

Riegel

• TAILOR-MADE PAPERS FOR INDUSTRIAL USE •

▼ BREVITY—Identify by IEN - 406 if you write the maker ▼

Ford Motor Co. saves 96.5% on COOLANT FILTRATION COSTS with HONAN-CRANE Equipment

GET THE DETAILS!

These case histories and "Clean Oil Bulletins" describe how industrial plants, large and small, save thousands of dollars annually with Honan-Crane Oil Purification and Handling Equipment.

TEAR OUT THIS AD, check the boxes and mail TODAY!

Soluble Oil Coolant →
☐ Case Histories: Ford Motor Company and Milwaukee Gas Specialty Co.

Chip and Waste Removal →
☐ Case Histories: Manufacturer of fine Automobiles and Minneapolis Electric Castings Company. (Houdaille Conveyor Systems.)

Machine Tool Cutting Oil →
☐ Case History: Wagner Electric Corp., St. Louis.

Oil Quenching →
☐ Case Histories: Cleveland Graphite Bronze Co., Ft. Wayne Works of International Harvester and Salisbury Axle Division of Dana Corporation.

The Facts About Clean Oil →
☐ 14-Page booklet describes highly profitable advantages of oil purification in wide variety of industries. Gives brief case histories.

Hydraulic Bulletin →
☐ 8-Page booklet tells how Honan-Crane Equipment reduces downtime and costly repairs on hydraulic presses, machine tools, plastic molding machines, etc.

NAME
TITLE
COMPANY
ADDRESS
CITY STATE

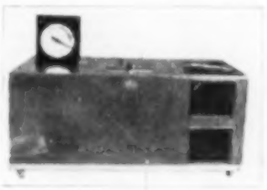
CLEAN OIL ENGINEERING

Honan-Crane Corp.
802 WABASH AVENUE
LEBANON, INDIANA
A Subsidiary of **Houdaille-Hershey Corp.**

▼ BREVITY—Identify by IEN - 408 if you write the maker ▼

REFRIGERATING . . Sub-zero machine to shrink, stabilize, test, harden

Source: WEBBER APPLIANCE CO.
2738-42 Madison Ave., Indianapolis 3, Ind.



$1,800 to $7,000

Temperature can be maintained down to 125 deg. below zero in the 2 cu. ft. cold compartment of this new assembly in the company's line of industrial freezers. It is new in a line including models rating to 45 cu. ft. for temperature as low as 165 deg. below zero. Each is built to meet given specifications on a basic assembly.

Operation is based on two-stage action employing standard air-cooled refrigerating equipment operating on 110-volt 60-cycle ac. Normal running time is 15 to 20 min. of each hour. The unit is built within a stainless-steel housing based on a structural frame and mounted on ball-bearing casters. The refrigerating equipment is in accessible location at one end. The insulated cold chamber is about center.

▼ BREVITY—Identify by IEN - 409 if you write the maker ▼

PAINTING . . Stainless steel powder in resin vehicle to brush on or spray

Source: STEELCOTE MFG. CO.
P. O. Box 550, St. Louis 3, Mo.

Prevents corrosion

Application of this new metal-pigment paint is by brushing or spraying on metal surfaces to produce a protective film with the essential characteristics of stainless steel. Cost is about 4 cents per square foot. The material is packaged in 1 and 5-gal. containers. The film dries to handle in 30 to 60 min. and can be put into service in 3 to 4 hours. Surface appearance is that of unpolished stainless steel.

▼ BREVITY—Identify by IEN - 410 if you write the maker ▼

HANDLING . . Baskets, pans, racks, rubber coated to protect fragile work

Source: AUTOMOTIVE RUBBER CO.
8603 Epworth Blvd., Detroit 4, Mich.

By rubber coating specialists

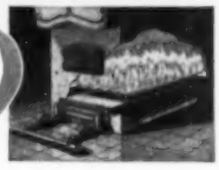
Illustrated are typical new designs of work handling equipment which the company has provided with a coating of rubber by means of dipping or sheet lining. The rubber presents a shock absorbing surface to work pieces subject to breakage or marring. Equipment can be supplied for specified purposes or units sent to the company for the purpose can be rubber coated and returned to the shipper.

All Makes of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 411 if you write the maker ▼

IRON FIREMAN COMMERCIAL GAS BURNERS

LOW COST GAS FIRING for your building or plant



Ideal for quick, low-cost change over

Iron Fireman commercial gas burners are noted for their dependable operation and low gas consumption. These burners, designed particularly for capacities up to 400 boiler horsepower, are very flexible in operation and easily installed—*without costly alterations.*

The Vertical type burner, shown above, provides either manual or automatic control of burner heads in sections. It permits regulation of firing rate in proportion to heat requirements and thereby assures greater fuel economy.

The Iron Fireman Inshot type burner burns with a soft radiant flame. Two impinging jets behind each air port provide greater fuel and air entrainment. A wide range of sizes is available in these and other Iron Fireman gas burners.

Write for complete information and specification charts

IRON FIREMAN
MANUFACTURING COMPANY
3177 WEST 106th STREET, CLEVELAND 11, OHIO

▼ BREVITY—Identify by IEN - 412 if you write the maker ▼

3 VALUES!

★ One Piece Construction
★ Wide Wire Range
★ Economically Priced

BLACKBURN *Hi Strength* **TERMINAL LUGS**

Strongly constructed—all in one piece—yet small and compact, to fit in tight quarters. UL approved. Only 6 sizes cover a range from No. 14 to 1,000,000 CM. Specify Blackburn and get a quality lug in the low price field.

JASPER BLACKBURN CORP.
35 Madison St., St. Louis 6, Mo., CEntral 3007

▼ BREVITY—Identify by IEN - 413 if you write the maker ▼

NEW MACHINE LEVELING DEVICE

Empco JACK STYLE JS

Locates on anchor bolt.
Self-aligns to uneven floor.
Easily lifts 8,000 lbs.
Simply turn adjusting nut to raise or lower machine.
VI-SORB mounting pads absorb vibration.

Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level.

Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installation. Anchor bolt hole through the jack assembly allows clearance for ¾" diameter bolt. This permits the Empco Style JS Jack to be used at the *precise spot* where equipment was designed to be best supported.

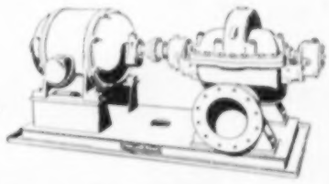
Available in three sizes: 1¾", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.

Write for specifications and prices of the complete line of Empco Leveling Jacks today.

EMPCO "PRODUCTS"

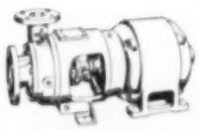
THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

▼ BREVITY—Identify by IEN - 414 if you write the maker ▼



Class AFV, single-stage double-suction pumps.

Cut POWER COSTS *with* I-R, high-efficiency centrifugal pumps



Class RV, single-stage Motorpumps.

Whatever the liquid, you can *move it* more economically and dependably with I-R centrifugal pumps. They are designed to retain their original high efficiency year after year—with minimum down-time for inspection and servicing.

I-R pumps are available in sizes and capacities to meet every requirement. If you have a pumping problem, we have the answer.

Ingersoll-Rand
11 Broadway, New York 4, N. Y. 707-10

CONDENSERS • CENTRIFUGAL PUMPS • DIESEL AND GAS ENGINES
COMPRESSORS • AIR AND ELECTRIC TOOLS • ROCK DRILLS • TURBO BLOWERS

BREVITY—Identify by IEN - 415 if you write the maker

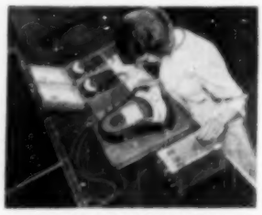
wherever you need to vary the voltage . . .

Inductrols

(DRY-TYPE INDUCTION VOLTAGE REGULATORS)

Typical Uses:

- Motor speed control
- Rectifier control
- Heat control
- Dielectric testing
- Instrument calibration



Hand-operated, G-E Inductrol being used in the calibration of a-c voltmeters against standard instrument. Just one of the many ways it helps increase efficiency and speed production.

G-E Inductrols are small, dry-type induction voltage regulators, suitable for many applications.

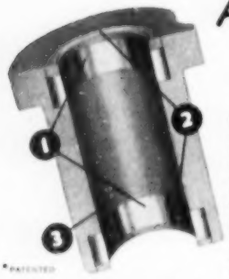
Unit shown above operates from either 120 or 240 volt a-c circuits, with output variable—steplessly, with micrometer fine precision, from 0 to 240 and 0 to 480 volts respectively. It will handle 5 or 10 amperes. Absence of brushes, contacts and commutator reduces maintenance. Unit has autotransformer efficiency.

You can get G-E Inductrols in hand-operated or in manually-controlled, motor-operated designs for circuits 600 volts and below. For complete information, see your nearest G-E sales representative, or write for Bulletin GEC-795, *General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

BREVITY—Identify by IEN - 416 if you write the maker

MORE HOLES— MORE ACCURACY— FASTER— AT LESS COST



MEYCO

Carbide Inserted Bushings Are Doing It Daily!

HOW? Like this: (1) Last longer . . . with a life—in most cases—as long as solid carbide bushings at prices that come close to the prices of ordinary steel bushings; (2) Increased life for your drill jigs and fixtures; (3) Increased life for your drills and reamers; (4) Accuracy maintained for a LONG PERIOD of time; (5) Less non-productive machine time, less lost man-hours, because bushings need not be changed as often; (6) Inspection time saved, because of greater accuracy for a longer time; and (7) Less waste due to spoilage, for the same reason. Don't pass up a good bet! Get the dope on MEYCO Carbide Inserted Drill Jig Bushings today!

*PATENTED

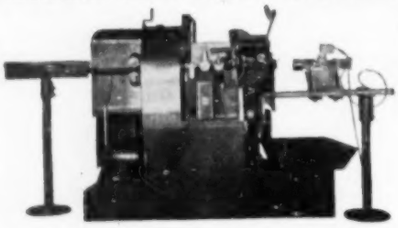
1. Tungsten carbide rings at the points of wear. 2. Steel rings protect drills and carbide. 3. Special hardened alloy steel body.

For information and prices write for Meyco Bushing Catalog No. 18.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

BREVITY—Identify by IEN - 417 if you write the maker

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machine—any length you want. FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing	1¼" Cold Rolled	1" Tubing
Cuts and Chamfers both outside edges of ½" .035 wall tubing, 8" lengths, every 2.5 seconds.	Cuts and Chamfers both ends, 20" long, at rate of 1 every 20 seconds.	Cuts and Chamfers both outside edges, 4 pieces 3" long, one every 3 seconds.

4" THREADED STUDS

These popular time saving machines are now available in 4 sizes, handling work up to 8¾" O.D.

WRITE for CATALOG

Cut and chamfered at one time—in 8 sec.—from 10 ft. length of stock already threaded (⅝" U. S. Standard). Clean cut. Clean chamfer. Nuts start easily, with no extra finishing required.

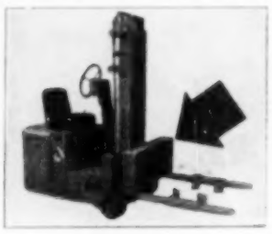
MODERN MACHINE TOOL CO.

JACKSON MICHIGAN

BREVITY—Identify by IEN - 418 if you write the maker

TRUCK . . Clamping fork attachment, hydraulic pressure grips load laterally

Source: LEWIS-SHEPARD PRODUCTS INC.
191 Walnut St., Watertown 72, Mass.



Forks grip laterally

New attachment for the company's Spacemaster "49" electric fork truck includes a pair of forks operated by two double-acting hydraulic rams. They work together to provide uniform lateral movement that positions the forks between 12 and 27 in. apart. The action applies lateral pressure determined by the setting on a hydraulic by-pass relief valve.

Gripping pads assembled in pairs on sleeves fit over the forks. They can be removed when the forks are to be used to lift and lower a load in normal operation. Control centers at a hand valve at the operator's position.

Lifting and lowering as well as tilting of the uprights and control of the travel speed in forward and reverse are controlled at pedals. Travel direction, steering and movement of the clamping arms are actuated by hand levers. Application on the 1,000, 1,500 and 2,000-lb. Spacemasters.

BREVITY—Identify by IEN - 419 if you write the maker

NAME PLATE . . Laminated plastic for service temperature to 275 deg. F.

Source: ALLEGHENY PLASTICS INC.
391 Chestnut Road, Sewickley, Pa.

Ask for samples

A printed sheet of absorbent paper is built up with a core of phenolic or melamine-impregnated paper and is over-laminated with melamine plastic in manufacture of a new line of name plates, dials, scales. The line supplements the company's previously developed thermoplastic construction which was limited to a service temperature not exceeding 150 deg. F. Color combinations, sizes and thickness can be specified.

A second type, suited for production of small quantities, is a phenolic melamine-laminated unit engraved with the required markings. It is available in black with a white or gray background and black or white markings. Various colors of filling can be used in the markings to provide added color-combinations. The company is prepared to quote on receipt of specifications and drawings. It will prepare the necessary artwork if this is also required.

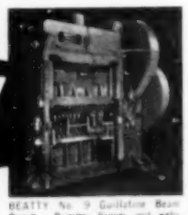
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?

See the product index inside the back cover

BREVITY—Identify by IEN - 420 if you write the maker

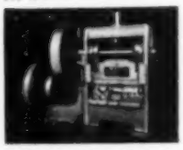
BEATTY



BEATTY No. 9 Guillotine Beam Punch. Punches flanges and webs of beams 6" to 30". Capacity 200 tons.

METAL WORKING TOOLS —

are the product of broad experiences and skill aimed at solving a specific problem. If you have such a problem, let a Beatty engineer work with you on it. Our broad experience in metal working production qualifies us to handle the most difficult assignment.



BEATTY Guillotine Shear for "short order" shearing without changing tools.

BEATTY Spacing Table handles flange and web punching without roll adjustment.

BEATTY MACHINE AND MFG. COMPANY

HAMMOND, INDIANA

BREVITY—Identify by IEN - 421 if you write the maker

MORE SPEED than You Need—

DEALER TERRITORIES AVAILABLE
Information on request

Just Add WELD-AIR-MATIC

to your Old Rocker Arm Welders

Here's a way to really produce extra profits with your present rocker arm spot welders. All it takes is the simple installation of a compact Weld-Air-Matic. This self-contained control unit empowers your welder—adds speed, accuracy and ease of operation not realized in your present foot-operated welder.

Tests Prove 10,000 Welds Hourly On Continuous Daily Schedules

Feather-touch foot switch controls pressure by energizing a coil on a 4-way operating valve. Employing reduced air pressure of 15 to 50 lbs., it has a maximum stroke of 1½" on size 1 unit, 2" on size 2, and 2½" on size 3 unit. Requires a maximum of 4 cu. ft. air supply per minute with 80 lbs. minimum line pressure, and any standard Weld Timer. Three sizes available—all accessories mounted to one strong aluminum alloy casting.

Get the facts on how you can break all previous production records by modernizing with the new Weld-Air-Matic. The savings you'll make will quickly compensate for the nominal investment.

ROBT. W. HOFFMAN COMPANY, INC.

42 South Clinton Street Chicago 6, Illinois

BREVITY—Identify by IEN - 422 if you write the maker

IT'S HERE!

Grafo R-3

A Smokeless Colloidal Graphite

FORGING COMPOUND

that

Increases die life
Insures surface quality
Eliminates fire hazards

A WORKING SAMPLE SENT ON REQUEST

Other Grafo Colloidal Products Available For All Industrial Lubrication

"Grafo" Colloidal Graphite may be obtained in water, petroleum oil, castor oil, in concentrated, semi-concentrated and ready-to-use mediums.

Write Us Regarding Your Special Application

GRAFO COLLOIDS CORPORATION

MANUFACTURERS OF COLLOIDAL PRODUCTS

299 WILKES PLACE
SHARON, PENNSYLVANIA

BREVITY—Identify by IEN - 423 if you write the maker

The New **Hoffman** ELECTRONIC SAFETY GUARD gives you

New Electronically Controlled SAFETY and BARRIER GATE GUARD brings benefits to both management and workers

YOU can increase your plant power press production immediately with installation of the Hoffman Safety and Barrier Gate Guard. It gives the operator greater assurance, eliminates fatigue and accident time-loss. It will give higher and smoother production per man hour.

The Hoffman Guard is an electronically controlled guard consisting of four major parts—Light Source and Photo Cell Assembly — Amplifier — Magnetic Treadle Control — Non-Repeat Micro Switch. The Barrier Gate Guard is an auxiliary unit and is used as a double safety precaution.

HOFFMAN ENGINEERING CORP.
Department 4-1 • Anoka, Minnesota

Please send free details about the Hoffman Electronic Safety Guard.

Name _____
Address _____
City _____ State _____

HOFFMAN ENGINEERING CORPORATION
ANOKA MINNESOTA
Electronic Controls for Industry

▼ BREVITY—Identify by IEN - 424 if you write the maker ▼

▼ BREVITY—Identify by IEN - 425 if you write the maker ▼

New Fenwal Catalog

gives you the inside facts about the unique operation of a cost-cutting, multi-purpose thermostat

Find out now how the superior THERMOSWITCH principle of temperature control results in high sensitivity, high load-carrying capacity, low thermal lag, and wide adjustment range. See how the THERMOSWITCH unit assures complete enclosure against dust and dirt . . . high resistance against shock and vibration . . . low cost and ease of installation.

Read the detailed descriptions of different types of THERMOSWITCH thermostat units as used in varied types of applications. Note the application pictures.

If your processes involve control of temperature, humidity, vapor level, radiant heat, pressure or other variables dependent on heat, you owe it to yourself to get your copy of this new catalog today. *Fenwal* THERMOSWITCH *units are unlike any other thermostats.* For your free copy, simply write Fenwal, Incorporated, 71 Pleasant Street, Ashland, Massachusetts.

Fenwal

THERMOSWITCH®

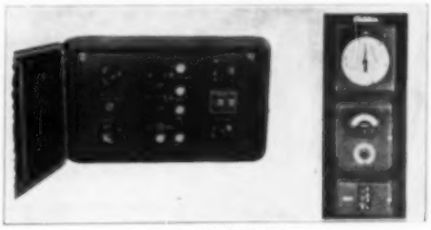
Precision, Multi-Purpose Thermostat Controls

SENSITIVE...*but only to heat*

▼ BREVITY—Identify by IEN - 427 if you write the maker ▼

CONTROL . . Electronic equipment regulates moisture in fabric drying

Source: FIELDEN INSTRUMENT CORP. 2918-22 No. 4th St., Philadelphia 33, Pa.



List is about $1,300

Operating speed of a fabric-drying machine or of a warp-sizing machine is controlled by application of new equipment the company has developed to operate in connection with its Drimeter and associated apparatus, previously described IEN-5290-49. The new equipment is particularly suited for continuously-running machines to compensate for the time lag between a correction to speed and the effect of this correction on the moisture content of the output. It acts to feed two variables to the control unit. These include a voltage from the Drimeter which varies in proportion to the moisture content and a voltage proportional to machine speed that is derived from a small alternator driven by a moving shaft.

A recorder provides continuous record of the moisture content. One set of pushbuttons is provided on the control panel for manual regulation together with a switch to select automatic or manual positions. A pilot light indicates when the panel is switched to automatic control. Pilot lights also indicate when the moisture content is within tolerance limits, when it is too high or too low and when a correction is being made to the speed of the machine.

Operation is based on the principle that capacitance of a two-plate condenser will vary with the amount of moisture carried by a fabric or yarn passing between the condenser plates. This condenser forms one leg of a bridge circuit which also contains a balancing capacitor. The bridge connects through an amplifier to the indicating dial and the control outlet. The control prevents over-drying, can increase production through existing equipment from 10 to 30 percent.

▼ BREVITY—Identify by IEN - 428 if you write the maker ▼

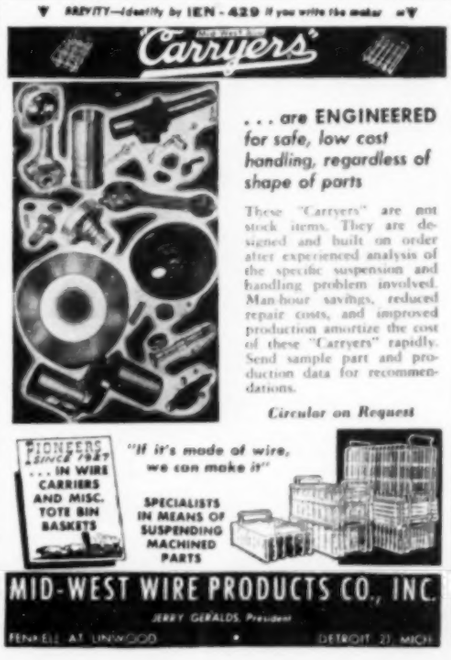
WOOD WORKING . . Master dado set, diameter 5⅝ in., width to 9/16 in.

Source: WESTERN SAW MFRS. INC. 1838-42 W. Washington Blvd., Los Angeles 7, Calif.

Outside cutters are assembled with six inside chippers in this new dado set to provide a cutting action in which there is sufficient delay prior to contact of the raker teeth to permit the side cutters to complete the groove side. Resulting cut is smooth and free from splintered edges. Width is adjustable from $\frac{1}{16}$ to $\frac{9}{16}$ in $\frac{1}{16}$-in. steps by changing the number of chippers. List price is about $6.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 429 if you write the maker ▼



▼ BREVITY—Identify by IEN - 430 if you write the maker ▼

▼ BREVITY—Identify by IEN - 431 if you write the maker ▼

For lab melts, pilot plant and small production . . .

The PT POT TILTING Furnace

This Detroit Electric Furnace has been specially developed to produce small melts of any metal with ease, economy and speed. 15-pound capacity pot can be used as a crucible or tilted to pour directly into molds. Roof lifts and swings for easy loading. Complete with controls. Full information on request.

WRITE FOR DETAILS

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL—Equipamentos Industriais "Eiso" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castelli Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Casco, S. de R. L. Atenas 32, Despacho 14, Mexico City, D. F. EUROPE: ENGLAND, Birlec, Ltd., Birmingham.

▼ BREVITY—Identify by IEN - 432 if you write the maker ▼

BREVITY—Identify by IEN-433 if you write the maker

SET RIVETS *faster* with T-J RIVITORS

CUT COSTS!

Speed up assembly . . . automatically feed and set solid rivets. Electrically powered Rivitor for 1/16" to 1/4" diam. solid steel rivets up to 7/8" long; air-powered Rivitor for aluminum alloy rivets up to 1/4" diam. or steel rivets up to 1/8" diam., up to 5/8" long. Throat depths, 8" to 36". Write for bulletins 616 & 817. The Tomkins-Johnson Co., Jackson, Mich.

T-J RIVITOR used for automotive clutch plate assembly. Saves time and labor doing a four-fold job—assembling, setting, inspecting and electing.

TWIN RIVITOR used for riveting flat steel springs to brackets for automobile horns.

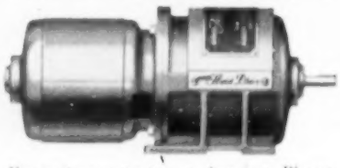
33 YEARS EXPERIENCE

T-J TOMKINS-JOHNSON RIVITORS

BREVITY—Identify by IEN-434 if you write the maker

Take advantage of this

FREE TRIAL OFFER



We invite you to try an American Blower Type TM Gyrol Fluid Drive in actual production on your own machines.

We want you to see for yourself how these remarkable units save power, provide smooth acceleration, overload protection, and absorb shocks. No obligation . . . no cost to you.

Write us direct. Describe the machine on which you want to use the TM unit. Give horsepower of present motor. We'll contact you to arrange installation and trial period.

AMERICAN BLOWER

American Blower Corporation, Detroit 32, Michigan

Division of American Radiator & Standard Sanitary Corporation

Serving home and industry AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

BREVITY—Identify by IEN-435 if you write the maker

does the job better!

ROCKWOOD ball VALVES

300 P. S. I. WORKING PRESSURE

The most dependable and efficient performing Valve on the market. Every Rockwood Valve is designed and built to give you longer and more economical service.

The full round flow—leak proof service—quick opening and closing features of the Rockwood Ball Valve give you better and faster service with no maintenance. When you install a Rockwood Valve on the line, it does the job better.

For use in oil refineries, food, paper, textile, chemical and rubber plants, etc. Write for sizes and prices and for bulletin V-4.

Distributors in all principal cities.

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 1, MASS.

BREVITY—Identify by IEN-436 if you write the maker

TRUCK . . Engine drive, fork lift, has provision for fast maintenance

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.

Operator comfort also considered

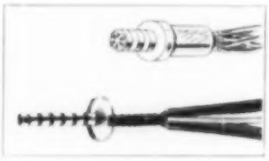
New construction in the company's Clipper line of engine-driven fork trucks includes a floor plate held in place by two screws for quick access to the mechanism beneath, a one-piece hood covering the engine compartment and latches to hold it in place for quick access to the engine compartment. An instrument panel is now standard equipment on each machine. A new pull-type brake replaces the hand brake for parking. Gasoline tank inlet is extended to the front where it is covered by a Protectoseal cap outside of the engine compartment.

Elliot type axle design improves the steering characteristics. Good riding qualities are obtained through the use of cushioned tires and rubber torsional bushings at the pivot mounting points. A redesigned double-cylinder tilt mechanism assures good upright stability and positive control of the tilt action.

BREVITY—Identify by IEN-437 if you write the maker

CONNECTOR . . Slip ring assembly made by depositing silver on plastic

Source: ELECTRO-TEC CORP.
4-8 Romanelli Ave., South Hackensack, N. J.



These are really small

New small sizes employing silver rings measuring 0.045 in. in diameter by 0.030 in. in width have been added to the company's line of slip-ring assemblies, previously described IEN-374.51. Barrier width between rings is 0.015 inch. Weight of a six ring unit is 5.5 grains. Leads are color coded. A completed assembly will withstand a 1,000 volt test from ring to ring and between leads.

The rings test 60 to 70 on the Brinell scale. They are made of silver with palladium or rhodium or gold surface deposit.

BREVITY—Identify by IEN-438 if you write the maker

CONTROLS . . Operating suggestions in booklet on company's centrifugal governor

Pierce Governor Co.
508-12 Indianapolis Ave., Anderson, Ind.

Detail description on the company's centrifugal governor opens new 12 page bulletin, "How to Get the Most Out of Your Governor". It includes how the governor operates, weight energies and calibrations, valve boxes and linkages, effect of engine position on governor efficiency. In addition there is a section on adjustment, care and maintenance with drawings to illustrate the points brought out in the text.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-439 if you write the maker

There are more TRABON Automatic Lubricating Systems in operation than all other makes!

We Sell Lubrication . . .

● Which means Trabon customers get a lubricating system that—day after day and year after year—properly lubricates bearings, with a minimum of down time and maintenance.

No shutdowns due to bearing failure—no work stoppage for lubrication . . . Trabon lubricates as your machines produce . . . delivers the right amount of lubricant to each bearing.

Repeat orders prove the merit of Trabon. Trabon Lubricating Systems are your insurance against costly down time and lost production.

Trabon
OIL AND GREASE SYSTEMS

TRABON ENGINEERING CORP.
1814 East 40th Street
Cleveland 3, Ohio

BREVITY—Identify by IEN-440 if you write the maker

SAFETYMIX

EXTRA SHOWER SAFETY . . . at no extra cost

PROTECTS AGAINST SUDDEN SCALDS

. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT

. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE

. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE

. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

BREVITY—Identify by IEN-441 if you write the maker

THEY CUT AND CUT AND CUT

Every

JOHNSON

METAL CUT-OFF

BAND SAW

is a BEAR for WORK and Lasts Indefinitely

MODEL J cuts 10" rounds, 18" flats. Available as a wet or dry-cutting machine.

When you buy a Johnson Band Saw you can be sure it will stand up and deliver constant service year after year. Johnson Saws are ruggedly built from the best standard parts available. They are adaptable to any cutting job, requiring only a minute's time to change from light to heavy stock. For extra capacity, accuracy, speed and economy, insist on Johnson with its many outstanding features.

MODEL B smaller machine shown at right . . . Does a man-size job. Cuts 5" rounds, 10" flats. Furnished with or without casters. Really portable, can be taken anywhere for on-the-job cutting.

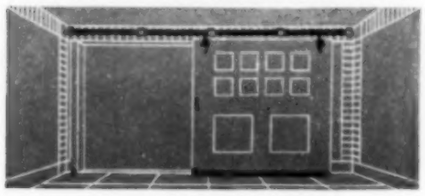
THERE IS A DEALER NEAR YOU

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

▼ BREVITY—Identify by IEN - 443 if you write the maker ▼

COBURN

SLIDING DOOR HARDWARE



- . . . LOW INSTALLATION COST
- . . . SMOOTH, EASY OPERATION
- . . . LONG, TROUBLE-FREE LIFE
- . . . ADAPTABLE FOR BOTH NEW AND REMODELING JOBS

Sliding door hardware for industrial applications of all types: Straight-sliding, sliding-folding, around-the-corner, roundhouse and fire doors.

For additional information write to Sales & Engineering, 56 Sterling St., Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION CF&I

▼ BREVITY—Identify by IEN - 444 if you write the maker ▼

BETA CHART PENS

Beta Fountain Pens hold two to four times the ink of ordinary chart inking pens. Regardless of the line thickness Beta Pens produce a smooth unbroken and uniform line. Pens shown are approximately actual size and can be arranged to reduce time interval between static and differential lines to only a few minutes. Beta Pens are especially suitable for seven day records. Price $1.10 (lower prices in quantities).

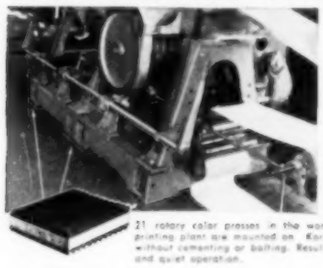
Send for bulletin No. 110.

AMERICAN
RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

Available for Early Delivery

▼ BREVITY—Identify by IEN - 445 if you write the maker ▼

It's SIMPLE To Control VIBRATION and NOISE with Elasto-Rib...



21 rotary color presses in the world's largest label printing plant are mounted on Korfund Elasto-Rib—without cementing or bolting. Result—perfect register and quiet operation.

NO BOLTING

NO CEMENTING

LOW COST

Elasto-Rib effectively stops transmission of vibration and noise by utilizing the elastic and damping properties of both cork and rubber.

It is fast and easy to install. For most machine applications, no bolts, lag screws or cement are required. Sheets 24" x 36" can be sawed or cut to size as needed.

New, illustrated booklet tells all about Elasto-Rib and how to install it. Ask for ER-701 and free sample.

Representatives in Principal Cities

KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK

THE KORFUND CO., INC.
48-35E 32nd Place, Long Island City 1, N. Y.

▼ BREVITY—Identify by IEN - 446 if you write the maker ▼

CONSTRUCTION . . Power shovel, three sizes rate 2 to 4 cubic yards

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.

Strong backs can rest

Three sizes have been added to the Tractor-Shovel line of tractor-mounted shovels, previously described IEN 502-51. The three are known as HD-9G, HD-15G and HD-20G. Ratings are 2, 3 and 4 cubic yards. Maximum dumping height is about 11½, 12½ and 13½ feet. Special buckets can be specified to handle light materials such as snow or coal. In this case the largest unit has a rating of 7 cubic yards.

Interchangeable attachments are available to include special buckets, snow plows, bulldozer blades, rock forks. All can be removed or installed quickly after removal of four pins that hold them in place on the tractor assembly.

▼ BREVITY—Identify by IEN - 447 if you write the maker ▼

ADHESIVE . . Water white liquid permanently bonds vinyl plastics

Source: SCHWARTZ CHEMICAL CO.
324-28 W. 70th St., New York 23, N. Y.

Regular and heavy grades

Vinyl Cement is a new water-white solvent-type adhesive for use on flexible or rigid vinyl plastics in sheet or molded form. The adhesive requires only a one surface application. Setting takes place in a few seconds and full strength of the bond will develop in about 20 minutes. Two grades, known as regular and heavy, are packaged in quart and gallon cans and in 55-gal. steel drums.

▼ BREVITY—Identify by IEN - 448 if you write the maker ▼

MARKING . . Wheel type head for quick selective numbering in a press

Source: NUMBERALL STAMP & TOOL CO.
371 Huguenot Park, Staten Island 12, N. Y.

Knobs to set it

Model 83 is a new custom-built head available with 1 to 15 engraved wheels carrying figures measuring 1/16 to ¼ in. in height as specified. Letter wheels with a maximum of 11 letters and a blank are available also. The wheels are selected, indexed and locked by manipulating knobs on the sides of the head.

Engraved figures align with a mark at the front of the housing to show the pattern that will be impressed in the work. A five-wheel assembly lists at $130 to $156 in character sizes measuring 1/16 to ¼ inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50.

▼ BREVITY—Identify by IEN - 449 if you write the maker ▼

6 OUTSTANDING FEATURES of the ROBINSON Metering Pump

- Forcibly ejects fluid compounds . . . not a gravity dispenser.
- Thermostatically controlled heat . . . maximum temperature 450° F.
- ⅔ Second per ejection . . . motor driven, clutch actuated.
- Variable discharge . . . speed of ejection changed in 2 seconds **without tools.**
- Reduces unit costs . . . saves material, reduces rejects . . . no skilled operator required.
- Adaptable to any production technique . . . easily installed.

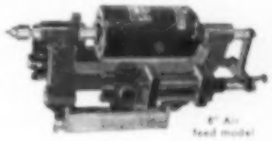
The Robinson Metering Pump has a wide variety of applications and, therefore, may be instrumental in solving some of your problems. Write us for further information.

EDWARD E. ROBINSON
P.O. Box 147
95 PARK AVENUE • NUTLEY 10, N. J.
Telephone NUtley 2-4510

▼ BREVITY—Identify by IEN - 450 if you write the maker ▼

Precision Hi-Speed Drilling in Metal, Wood, Plastic or Composition—.004"-.156".

Check These 9 Features



8" Air feed model

- Fingertip variable speed
- Fast approach air feed
- Hydraulic feed control
- Electric or manual controls
- Deep hole drill cleaning
- Sensitive precision spindle
- 1000-10,000, 2500-15,000 RPM
- Can be mounted at any angle, with hand or power feed
- Price 8" model, hand feed, from $130.00. Air feed model (as shown) from $238.50.

Write for helpful bulletin

The ELECTRO-MECHANO CO.
267 E. ERIE ST., MILWAUKEE 2, WISCONSIN

▼ BREVITY—Identify by IEN - 451 if you write the maker ▼

Starrett FRICTION THIMBLE* MICROMETERS

Give You

- UNIFORM PRESSURE
- UNIFORM READINGS

Every Time

*An improved ratchet stop mechanism built right into the thimble permits easy one-hand operation of the micrometer . . . insures uniform contact pressure on every measurement. Friction Thimble puts the ratchet stop mechanism "right under your thumb" where it's easy to reach, easy to use. You get the same sure accuracy every time independent of "feel". Friction Thimble is an ideal feature for inspection and quality control applications and for all precision work requiring consistent accuracy. Ask your Starrett Tools distributor to show you Starrett Micrometers with Friction Thimble . . . plus 12 other big Starrett features including Satin Chrome Finish, Tapered Frame, Hardened Threads ground from the solid and stabilized and Hi-Micro Mirror Lapped Finish on contact faces.

Starrett
SINCE 1880
THE L. S. STARRETT COMPANY ATHOL, MASS. U.S.A.
BUY THROUGH YOUR DISTRIBUTOR

▼ BREVITY—Identify by IEN - 452 if you write the maker ▼

famco Model "612" METAL CUT-OFF BAND SAW

Offers New Design Features

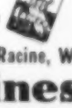
ANOTHER COST-CUTTING MACHINE

● Truly a finished machine tool, the Famco "612" Metal Cut-Off Band Saw cuts all shapes, all types of metals. It's ruggedly built of semi-steel castings and alloy steel. Cast aluminum guards provide extra safety. Capacities up to 6" round and 6" x 12" rectangular stock. Made in the typical Famco tradition of "the highest quality machine for the money."

A Few Famous Famco Features

Open construction for easy access; micrometer stock stop for quick setting, precision sawing; ¾" x .042 blade; coolant system added in a jiffy; improved design means easier blade changes. Timken roller bearing equipped transmission; quick setting guide arms; blade guard telescopes automatically; 50, 100, 175 and 300 FPM cutting speeds; vise jaws adjust to 45° angle.

Write for Free Catalog



Complete information, including models, specifications and new design features, is available in a new illustrated catalog.

FAMCO MACHINE CO., 1303 18th St., Racine, Wis.

famco COST CUTTING **machines**

ARBOR PRESSES • DRILL PRESSES • METAL CUT-OFF SAWS
POWER PRESSES • FOOT PRESSES • SQUARING SHEARS

BREVITY—Identify by IEN - 453 If you write the maker

NEW SLIDE CHART

on *Carpenter* Stainless Tubing & Pipe gives you

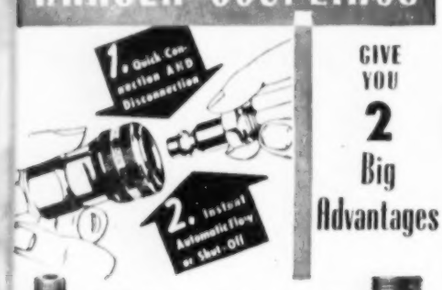
- Recommended Bending Radii and Coil Diameters for tubing and pipe from ⅛" to 5".
- Physical Constants, standard sizes and pressure data.

A note on your company letterhead will start this useful Carpenter Stainless Tubing Slide Chart on its way to you.

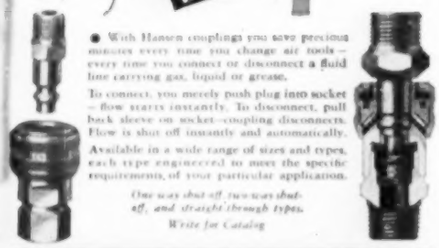
THE CARPENTER STEEL COMPANY
Alloy Tube Division Union, New Jersey

BREVITY—Identify by IEN - 454 If you write the maker

HANSEN COUPLINGS



GIVE YOU 2 Big Advantages



● With Hansen couplings you save precious minutes every time you change air tools—every time you connect or disconnect a fluid line carrying gas, liquid or grease.

To connect, you merely push plug into socket—flow starts instantly. To disconnect, pull back sleeve on socket—coupling disconnects. Flow is shut off instantly and automatically.

Available in a wide range of sizes and types, each type engineered to meet the specific requirements of your particular application.

One was shut-off, two was shut-off, and straight-through types.

Write for Catalog

THE HANSEN MANUFACTURING COMPANY
4411 WEST 150th STREET • CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 455 If you write the maker

Manufacturing and processing plants use Minneapolis-Moline heavy duty wheel tractors on unusual yard handling operations. A wide selection of attached tools is available for moving bulk or palletized material with small investment.

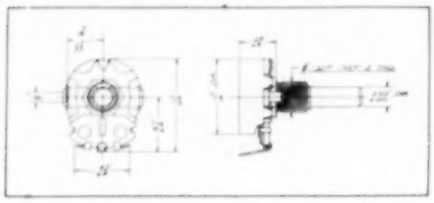
Manufacturers also use MM wheelers to mount graders, stevedore cranes, revolving cranes, and sweepers. Specifications available on request or ask for recommendation for your product. Engineering service available.

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

BREVITY—Identify by IEN - 456 If you write the maker

RESISTOR . . Variable design, water tight, ½ to 2 watt ratings

Source: CHICAGO TELEPHONE SUPPLY CORP. 1140-44 Beardsley Ave., Elkhart, Ind.



Primarily for military use

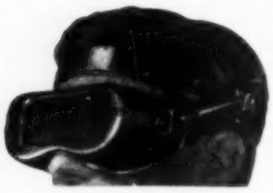
Type 90 is a new variable resistor designed for use in aircraft, marine and mobile equipment. Operation can be maintained in a temperature range between minus 55 and plus 150 deg. C. Three sizes measure ¾ to 1⅛ in. in diameter, rate ½ to 2 watts at 70 deg. C. with 350 to 500 volts maximum across the end terminals.

Each assembly is available with a locking bushing, water-sealed bearings and mounting. Straight tandem construction employs panel and rear sections operating separately from concentric shafts or a concentric shaft tandem with the panel and rear sections to operate separately.

BREVITY—Identify by IEN - 457 If you write the maker

PROTECTING . . Headrest goggle for gas welding, flame cutting, brazing

Source: JACKSON PRODUCTS CO. 31737-41 Mound Ave., Warren, Mich.



Holds in "up" position

Unigoggle is a new one-piece molded-plastic unit shaped to bear against the user's cheeks and forehead and to hinge on an adjustable plastic headrest. It mounts a single lens measuring 4¼ by 2 inches. The lens is protected by a cover glass and can be replaced by hand. Range of shade is from No. 3 through No. 6. Interior of the plastic body is ventilated. It can be worn over prescription glasses or safety spectacles.

BREVITY—Identify by IEN - 458 If you write the maker

WIRE ROPE . . How to take care of it described with "horrible examples" in bulletin

Macwhyte Co.
2934 14th Ave., Kenosha, Wis.

Article from the technical literature has been adapted and published as one of the company's "Rope-Ology" bulletins. Title is "Wire Rope—So What?" It describes in informal manner rope selection, storage and handling, reeving, operation, inspection and maintenance with four lubrication rules. Pictures show "horrible examples" of wire rope abuse.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 459 If you write the maker

BREVITY—Identify by IEN - 460 If you write the maker

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 317

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Exec. Offices: Times Bldg., Times Sq., New York N. Y.
SUPERIOR STEAM GENERATORS

BREVITY—Identify by IEN - 461 If you write the maker

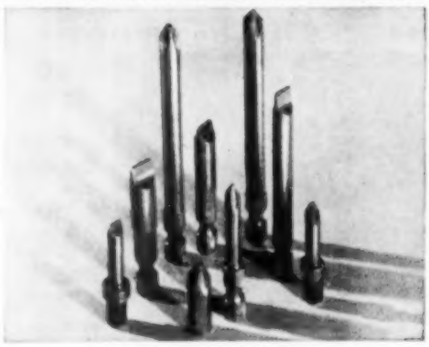
"Don't send me flowers, Boss . .

"Just put some Anti-Slip Cosmolite on those slippery floors!"

Now you can "cure" these slippery floor problems without special products or costly extra labor. New Anti-Slip Cosmolite does the job. Protects against floor damage. It's applied quickly like ordinary liquid wax. Dries bright. Eliminates unnecessary buffing. Resists water spotting. Sample on request.

Anti-Slip Cosmolite Wax
HUNTINGTON LABORATORIES, INC.
Huntington, Indiana • Toronto, Canada

BREVITY—Identify by IEN - 462 If you write the maker



You save replacement time with HOMMEL power screwdriver bits

Specially selected alloy steel and proper heat treating have given Hommel bits the hardness and toughness required for maximum service without replacement. A complete line for air and electric power screwdrivers is available . . . consisting of ¼ hex drive and threaded shank bits for slotted, Phillips, Frearson or Reed and Prince screws. Write now for catalog to Dept. IEN.

Since 1906 **HOMMEL**

Ludwig Hommel & Co., 72 First Ave., Pittsburgh 22, Pa.

BREVITY—Identify by IEN - 463 If you write the maker

AUTOMATIC HOPPERS
and
ASSEMBLY MACHINES

for

1. Machining
2. Assembling
3. Packaging
4. Sorting

We have helped many companies to lower their production costs.

Our experience in design of automatic equipment is available to you.

SEND US YOUR PROBLEMS

KRAUS DESIGN INC.
Designers and Builders of Automatic Machinery
948 Exchange Street Rochester 8, N. Y.

BREVITY—Identify by IEN - 464 If you write the maker

PROFIT HAS MANY FORMS
when the material is DUREZ

SLIDE VIEWER
uses four properties to good advantage

Four properties of Durez phenolics were of greatest value to the FR Corporation in the major parts of its new "Port-a-View" 35 mm. color slide viewer. Easy moldability made it possible to design intricate shapes for forming in straight open and shut dies. Durable, lustrous finish imparted in the molding operation adds sales appeal at no extra cost. Heat resistance and self-insulation help to make operation safe and dependable.

MACHINING ELIMINATED
in landing light motor housing and parts

Four major and six smaller parts of the lowering and raising assembly for this aircraft landing light are Durez high-grade general-purpose phenolic. Change from metal to plastic eliminated a number of machining operations. Molded-in metal inserts reduced assembly cost. Self-insulating property of Durez saved the cost of added insulation. For rugged services demanding unusal mechanical, electrical, or chemical properties, Durez is often unequalled.

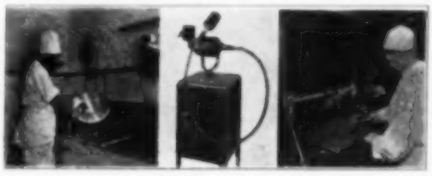
AMONG THE MORE THAN 300 different Durez molding compounds are many designed to meet the requirements of MIL-P-14A. Competent field technicians will gladly help you choose and use the one that best fits your requirements. To keep abreast of new uses of the phenolics, write on your office letterhead for our monthly "Plastics News." Durez Plastics & Chemicals, Inc., 1701 Walck Road, N. Tonawanda, New York.

DUREZ *Phenolic Plastics that fit the job*

BREVITY—Identify by IEN - 466 If you write the maker

CLEANING . . Flexible shaft machine drives brush, for kitchen equipment

Source: N. A. STRAND DIVISION
51 Clipper Road, Baltimore 11, Md.



Scrubs, scours, polishes

Vertical design for overhead suspension, and floor-mounted assemblies, to include the cabinet shown in the illustration or a caster-equipped tripod, make up three models of the company's Clean-Up machine. It is intended for kitchen and laboratory use to clean pots, pans, utensils, stoves, ranges, slicing and mixing equipment, grates, grills, burners. The vertical unit is available with a shaft to 30 ft. in length. In each case the shaft is encased in synthetic rubber for protection against moisture, vapor, soaps and detergents.

Standard equipment includes two cylindrical brushes, one with nylon bristles and one with stainless-steel wire bristles. They apply interchangeably, snapping in and out of position without need for tools. The motor is a ¼-hp. ball-bearing sealed design for operation on 110-volt 60-cycle ac. at either 1,140 or 1,725 rpm. as selected by the operator. The bearings are factory lubricated and sealed.

BREVITY—Identify by IEN - 467 If you write the maker

GAGE . . Electronic indicator reads run-out, deviation from dimension

Source: GRAHAM-MINTEL INSTRUMENT CO.
733-37 Carnegie Ave., Cleveland 15, Ohio

Reads to a split hair

Indi-Ac is a new general-purpose electronic indicator designed to read run-out in a rotating spindle and to check deviation from a previously determined dimension. The gage operates on 110-volt 60-cycle ac. It has two scales that apply interchangeably. They read 0.0005 and 0.00005 in. or 0.001 and 0.00001 in. per scale division on either side of zero.

The gage is ready to operate within 50 sec. of the time that its power circuit is closed. It is equipped with a built-in voltage regulator so it is independent of line fluctuation between 95 and 125 volts. Required contact pressure is 1 ounce.

Bulletin 101, 4 pages, presents illustrated detail description covering construction, specification and applications.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 468 If you write the maker

CYCLONE SEPARATORS

Our standard line of separators and years of specialized engineering will prove valuable in
PNEUMATIC CONVEYING
MATERIALS HANDLING
DUST CONTROL
and many other applications

WRITE FOR DATA SHEET

1712 N. 2ND ST.
PHILA. 22, PA.

QUINN BROTHERS INC.

BREVITY—Identify by IEN - 469 If you write the maker

CONTROL POWER BETTER

ROCKFORD CLUTCHES

BREVITY—Identify by IEN - 470 If you write the maker

Fans.. Blowers
FOR ALL INDUSTRY
"Standard Units or Custom Design"

DOUBLE SWIVEL AEROSPOT

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 36".

6 Blade RYNAFLOW Unit

Also available in two and four blade types. Sizes, 10" to 36".

DUCTYPE BLOWER

Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 10" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 327 E. COLFAX AVE. SOUTH BEND IND.

BREVITY—Identify by IEN - 471 If you write the maker

CORD SETS
That Are Right On The Beam

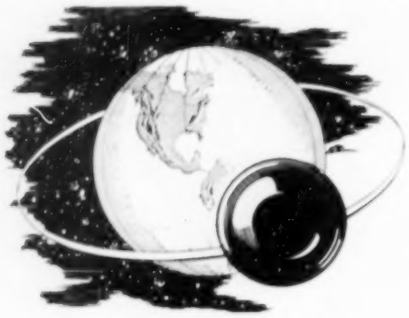
● Cords, Ltd. engineers and builds standard and special cord sets for any application. Proved dependability.

Most comprehensive stock of moulds and dies in existence for production of electronic cords and assemblies.

When you bring your cord problems to us you get the experience of the vast Essex Wire organization, plus integrated production of every component from wire bar to finished assembly. Write for details, explaining application.

WIRE SX PRODUCTS **CORDS LTD.**
DIVISION ESSEX WIRE CORPORATION
121 DODGE STREET, DEKALB, ILLINOIS

▼ BREVITY—Identify by IEN - 472 if you write the maker ▼



around the world, it's

HOOVER BALLS

made of

CHROME STEEL • CARBON STEEL • STAINLESS STEEL BRASS • BRONZE AND MONEL METAL

"America's Foremost Ball Manufacturer"

HOOVER BALL and BEARING CO.
Ann Arbor, Michigan

▼ BREVITY—Identify by IEN - 473 if you write the maker ▼

BOSS THE BEST KNOWN NAME IN **WORK GLOVES**

- WHITE CANTON FLANNEL GLOVES
- DOUBLE PALM GLOVES
- HOT MILL GLOVES & MITTENS
- LEATHER PALM GLOVES
- JERSEY GLOVES & MITTENS
- ALL-LEATHER GLOVES

A BOSS Headliner. Complete range of this item in catalog

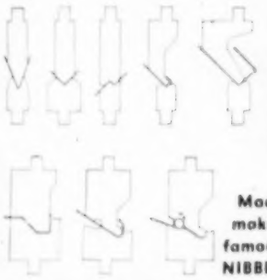
There's a perfect Boss Glove for *every* job

ASK YOUR DISTRIBUTOR or send for free copy of complete catalog and new "WORK GLOVE SELECTOR." The quick and easy way to find exactly the *right* glove for *every* job.

THE BOSS MANUFACTURING CO., DEPT. IE-1, KEWANEE, ILL.

▼ BREVITY—Identify by IEN - 474 if you write the maker ▼

BRAKE DIES



Made from **FORGED CHISEL STEEL BILLETS**

Made by the makers of the famous SEMCO NIBBLER PRESS

- MANY STILL IN USE EVEN AFTER 10, 20 AND EVEN 30 YEARS.
- THEY COST MORE BUT THEY LAST FOR YEARS.

Write for estimates on your work and ask for latest literature.

SEMCO
SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

▼ BREVITY—Identify by IEN - 475 if you write the maker ▼

HEATING . . Flexible electric cable prevents freezing, melts ice and snow

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.

For a little heat where it is needed

Thermwire trade names a new loop of nichrome heating wire covered with a synthetic sheath and permanently attached by a waterproof connection to a 10-ft. length of cold lead wire equipped with a plug. It is available in an 80-ft. loop for 115-volt operation and in a 160-ft. loop for 230 volts. Rating is 400 and 800 watts respectively. List price is about $11. and $23.

Application can be made by taping or wrapping the wire around pipe lines to prevent them from freezing, arranging runs and loops in gutters and on roofs to prevent accumulation of ice and snow, imbedding in concrete walks and driveways, wrapping around engines to keep them warm and around containers to warm liquids of various types.

▼ BREVITY—Identify by IEN - 476 if you write the maker ▼

THREADING . . Hand and machine taps specifically for given materials

Source: DETROIT TAP & TOOL CO.
415-A Boulevard Bldg., Detroit 2, Mich.

No added cost

Standard Specific designates a new line of taps now available from stock to supplement the company's regular general-purpose taps. Each is designed and produced primarily for operation in a given material. The line includes taps for aluminum, brass, cast iron, plastics, steel and tough materials, and zinc die castings.

Sizes in an overall range are between No. 0 and 1½ in. in National Course and National Fine thread series. Straight and taper-pipe sizes range from ½ to 2 inches. Several sizes of metric threads also are available. Flute form, thread relief, chamfer, heat treatment are typical factors taken into consideration in manufacture of each Specific tap.

▼ BREVITY—Identify by IEN - 477 if you write the maker ▼

CASTINGS . . Color sound film shows the operation of a steel foundry

Lebanon Steel Foundry
1st Ave. & Legman St., Lebanon, Pa.

Running time is 37 min. for new 16-mm. color sound motion picture, "Steel with a Thousand Qualities", available on loan to technical groups. The film shows electric furnace charging, tapping and pouring, permanent-mold centrifugal casting, types of castings produced, applications of steel castings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 478 if you write the maker ▼

FOR YOUR
STAINLESS STEEL FASTENERS... IT'S ALLMETAL for quality and delivery

ALLMETAL Specialists in Stainless, Produce Stainless Products Exclusively

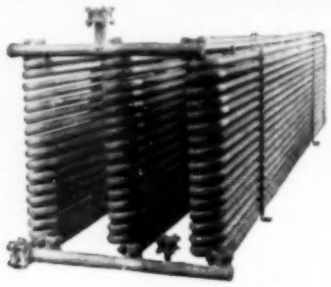
ALLMETAL
the leading source for Stainless Screws, Nuts, Bolts, Washers, Pins, Rivets. Made right, Priced right. "AN" and Standard Types carried in stock. Phillips Recessed Head Screws and Specials available too.

WRITE FOR CATALOG K

MANUFACTURERS SINCE 1929
STAINLESS STEEL FASTENERS
ALLMETAL
SCREW PRODUCTS COMPANY, INC.
33 GREENE STREET NEW YORK 13, N. Y.

▼ BREVITY—Identify by IEN - 479 if you write the maker ▼

PITTSBURGH a air p pressure t tested COILS



Pipe Coils — Bends — Boiler Tubes

Electrically welded, continuous; Air-Pressure-Tested while submerged in water. Built to your specifications.

— Send for Coil Data Book, and let us quote —

Welded Headers • Welded Ammonia Receivers • Accumulators

Pittsburgh Pipe Coil & Bending Company
Division of Enameled Metals Company
61 BRIDGE STREET ETNA, PITTSBURGH 23, PA.

▼ BREVITY—Identify by IEN - 480 if you write the maker ▼

ONE QUICK TWIST

● Insert a drill or any other shank tool in an Ettco-Emrick Keyless Ball Bearing Drill Chuck, give the chuck body a twist, and you're ready to operate. It's as simple as that. No key is needed, and scored shanks, drill slippage and retightening are eliminated. The chuck is self-centering and self-tightening. Get the full story today.

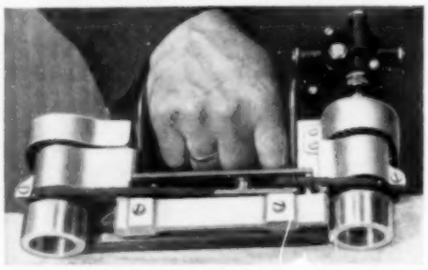
Sizes for all makes of drill presses and electric drills. Capacities range from No. 0 to ½".

Send for BULLETIN No. 7
ETTCO TOOL CO., INC.
607 Johnson Ave., Brooklyn 37, N. Y.
Detroit • Chicago • Worcester

Ettco-Emrick KEYLESS DRILL CHUCKS
Sold through leading distributors everywhere

▼ BREVITY—Identify by IEN - 481 if you write the maker ▼

FOR HEAT SEALING moisture barrier materials conforming to ARMY-NAVY PACKAGING SPECIFICATIONS



The New DOUGHBOY Model PHS-A Motor-Driven
POWER HAND SEALER

CHECK THESE FEATURES—

- ROTARY SEALING
- CONTINUOUS DWELL
- LIGHT WEIGHT (Net weight 12 lbs.)
- DEEP THROAT, 2"
- COMPACT DESIGN
- CORRECT SPEED (200 inches per minute)

Heat seals scrim back, polyethylene or vinyl to kraft and similar laminates. The ideal unit for closing floating and carton-type barriers.

ALSO AVAILABLE AS A BENCH MODEL
For complete information, write to

Doughboy DOUGHBOY INDUSTRIES, INC.
Mechanical Division
NEW RICHMOND, WISCONSIN

▼ BREVITY—Identify by IEN - 482 if you write the maker ▼

MARKEM®

MM made to make your MARK

MARKEM helps make their names famous

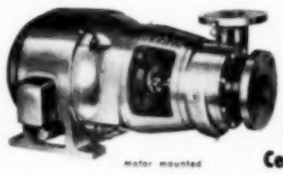
Under these trade marks are made products ranging from nylons to aircraft. They include garments, hosiery, knit goods and textiles, radio and TV tubes, equipment and resistors, vulcanizing equipment, cosmetics, pharmaceuticals, hand grenades, cartridges and canvas goods. All over the world, Markem methods, machines, type and inks are marking the products of industry.

There is a Markem method for almost every identification purpose. Markem Equipment is used for Marking on Products, Packages, Parts, or for producing Labels.

Submit your problem in detail with a sample of the item to be marked. Markem Machine Company, Keene, 2, New Hampshire.

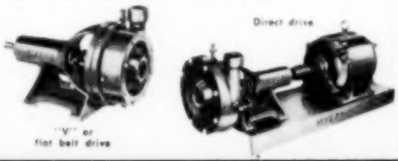
MARKEM BETTER MARKING SINCE 1911

▼ BREVITY—Identify by IEN - 483 if you write the maker ▼



High and Low Head Centrifugals

Standard fitted, all bronze or all iron for handling many different liquids, including inflammables. Impeller is mounted on motor shaft to insure perfect alignment and balance. No sub-base required. 1750 and 3500 rpm. Single or three phase.



MYERS Centrifugal Pumps

"HN" Series

Ideal for delivering large capacity against average pressures: for booster service, circulating uses, as a heat pump, or for hot water. Designed for continuous operation. Up to 50 gpm.

Got a Pumping Problem?

Our engineers will be glad to show how Myers Centrifugal Pumps can solve your problem. No obligation.

THE F. E. MYERS & BRO. CO. Dept. 7004-A2, Ashland, Ohio

▼ BREVITY—Identify by IEN - 485 if you write the maker ▼

ELEVATOR . . Portable hand hydraulic raises 800 lb. load 4 ft. above floor

Source: CENTURY PRODUCTS CO. 5927 Highway 7, Minneapolis 16, Minn.

List price is $279

Hand I-Lift is a new hand-operated hydraulic portable elevator with a structural welded frame mounted on four 5-in. rubber-wheel casters. The two forward units are rigid. The rear ones swivel. At the front is a foot-operated brake to hold a set position.

The hydraulic pump is mounted at the rear, delivers into a vertical cylinder with a piston carrying a sprocket. A roller chain rides the sprocket, is attached to the load platform and anchored to the frame. The platform rides in vertical guides on wheel bearings, measures 24 by 24 inches. Overall dimensions are 32 by 28 by 64 inches. The assembly weighs 180 pounds.

▼ BREVITY—Identify by IEN - 486 if you write the maker ▼

RECORD KEEPING . . Calendar pad permits user to read "future" dates

Source: SCHEDULE-A-DATE CALENDAR CO. 308-12 E. State St., Ithaca, N. Y.

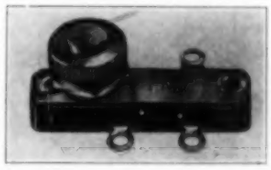
For purchasing and scheduling

New calendar pad with sheets measuring 3¾ by 6 in. carries, on one side of each sheet, tabulations of days, weeks and months for the year 1952. On the reverse of each sheet, which makes the facing page of the preceding sheet, is a calendar for the given month with the day identified and with room to make notations. The tabulation makes it possible to read the data represented by a promise of any given length of time ahead so "futures" can be seen at a glance. The pad alone lists at $1.75. A steel base is available at $1.60.

▼ BREVITY—Identify by IEN - 487 if you write the maker ▼

SWITCH . . Sensitive snap-acting, mounts on panel, 15 amp. at 110 volt ac.

Source: SESSIONS CLOCK CO. 50 Horton St., Forestville, Conn.



Mounting holes in housing

Tyniswitch Model PM is a new miniature unit measuring 4⅝ by ⅝ by about ½ inch. Underwriters' Laboratory rates it at 15 amp. on 110-volt ac., 7.5 amp. on 220 volts ac.

Operating force is 7 to 11 oz. with release force at 2 to 3 oz. and movement differential at 0.010 in. maximum. Contacts can be specified single-pole, single-throw and normally-opened or closed and single-pole double-throw design to meet requirements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 488 if you write the maker ▼

Precision Comes in ANY Size at AETNA!

Aetna's manufacturing facilities offer you an exceptionally broad type of precision service . . . over 500 different "off-the-shelf" ball thrust bearings . . . plus special bearings and parts from thumb-nail dimensions up to giant 36" O.D. sizes.

Whatever your needs in specials, Aetna's extensive experience and vast stock of tools and dies can be harnessed to produce them without cost of extra tooling and at surprisingly moderate prices. Write today.

AETNA BALL AND ROLLER BEARING CO. 4600 Schubert Avenue, Chicago 39, Illinois

Aetna

Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Washers • Sleeves • Bushings • Miscellaneous Precision Parts.

▼ BREVITY—Identify by IEN - 489 if you write the maker ▼

There is an EAGLE TIMER to SPEED up Your INDUSTRIAL PROGRESS

Let Eagle help increase your production and save many man hours with automatic opening and closing of electrical circuits. Eagle builds a timer for your individual process. Send us your timing problem or write for Bulletin 340.

EAGLE SIGNAL Industrial Timers

EAGLE SIGNAL CORPORATION MOLINE, ILL.

Export Agent: 13 EAST 40th ST., NEW YORK 16, N. Y.

▼ BREVITY—Identify by IEN - 490 if you write the maker ▼

LUMBER CRANE Pays For Itself In 13 Weeks

In just 13 weeks the entire cost of crane, runways, and erection was absorbed because of the efficiency that was introduced in the handling of lumber. 10,000 feet are handled per 10-hour-day.

This is one example among hundreds of the savings made possible with Cleveland Tramrail.

GET THIS BOOK! BOOK No. 2008 Packed with valuable information

CLEVELAND TRAMRAIL DIVISION THE CLEVELAND CRANE & ENGINEERING CO. 4231 EAST 285th ST., WICKLIFFE, O.

CLEVELAND TRAMRAIL

▼ BREVITY—Identify by IEN - 491 if you write the maker ▼

PORTABLE THREADER for Bolts, Studs, Rods, Nipples, and Pipe up to 2"

CATALOG Send For It!

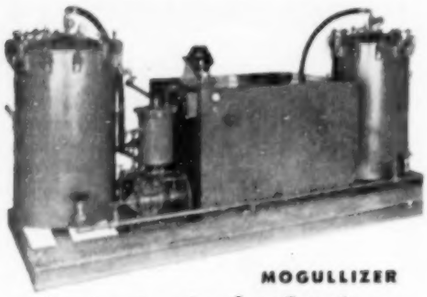
• Oster "TOM THUMB" Portable Bolt Threading Machines have semi-automatic features which speed threading and reduce costs of bolts, studs, rods, nipples, and pipe.

Range of machines: No. 581A standard bolt range ¼" to 1½"; pipe or nipple range ⅛" to 1¼"; No. 582A standard bolt range ¼" to 1½"; pipe or nipple range ⅛" to 2".

Write for "TOM THUMB" Bolt Threading Catalog.

THE OSTER MANUFACTURING COMPANY 2053 East 61st Street • Cleveland 3, Ohio, U. S. A.

BREVITY—Identify by IEN - 492 if you write the maker



MOGULLIZER

Eliminates Leaky Castings

If your contract calls for impregnation, or if your production castings leak or weep and will not hold pressure, investigate our Mogullizing system—a high vacuum and pressure method of sealing castings. Models to meet your requirements.

Any standard impregnating material can be used but for top efficiency we recommend our Mogul Cast Seal.

Prompt deliveries.

Write today for full details on the Mogullizing system.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 493 if you write the maker

A Journeyman's Tool, built to stand up under constant, on-the-job Contractor or industrial use . . .

● **NO STARTING HOLE NEEDED** . . . Simply place guide next to material and "rock" tool into an upright position.

● **CUTS RIGHT THRU IMBEDDED NAILS** . . . wood, plaster, iron pipe, sheet metal, "Transite" and most other materials—even in cramped quarters.

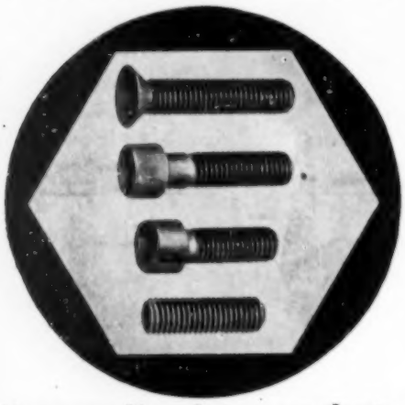
● **FITS HEAVY DUTY ¼" or ⅜" DRILL** . . . as easy as changing bits! Overall length only 10¾"; weight only 3 lbs. 6 ozs.

● **BUILT FOR CONSTANT DUTY OPERATION** . Built-in blower keeps Super-Saw cool even when used continuously and blows sawdust away from cutting line. Replaceable "Oilite", phosphor bronze and high speed ball bearings throughout. Write for Bul. H-1.

Listed on Federal Supply Schedules. Class 40 Material.

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U. S. A.

BREVITY—Identify by IEN - 494 if you write the maker



Unusually clean sockets

in double-extrusion-produced

Cleveland Socket Screws

Write for samples and prices

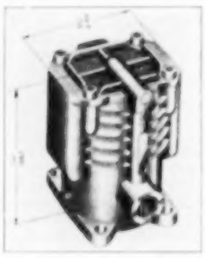
CLEVELAND Top Quality FASTENERS

THE CLEVELAND CAP SCREW COMPANY
2917 EAST 79TH STREET • CLEVELAND 4, OHIO
Warehouses: Chicago, Philadelphia, New York, Pittsburgh
Ask your jobber for Cleveland Fasteners

BREVITY—Identify by IEN - 495 if you write the maker

VALVE . . Solenoid operated for air or oil, 2 and 3 way, for pilot duty

Source: VALVAIR CORP.
949 Beardsley, Akron 11, Ohio



For remote control

New valve has been designed to serve as a pilot for a hydraulic-pneumatic operating valve employed in power-cylinder control. It will cycle the company's ¼, ⅜ and ½-in. cylinder valves at 300 operations per min., or the ¾ and 1-in. valves at 150 operations. The 3-way design can be operated as a 2-way unit by plugging the exhaust port. The solenoid coil is available for connection to a 110, 220 or 440-volt 60-cycle ac. line for either normally-opened or normally-closed arrangement.

The plunger is fitted with Hycar synthetic rubber seats at both ends and is backed by a stainless-steel spring. It contacts stainless-steel seats. The air or fluid passing through the center of the assembly picks up heat from the coil to prevent it from overheating. Operating pressure is 125 lb. with a ⅛-in. orifice, 60 lb. with a $\frac{5}{16}$-in. orifice. Each unit is equipped with ¼-in. pipe-threaded connections.

BREVITY—Identify by IEN - 496 if you write the maker

TRUCK . . Drum lift attachment rides the forks on a power lift truck

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Clamps on truck forks

One or two standard drums can be picked up with this new lift attachment when it has been secured to the lift forks on a power truck and lowered over the drums as they lie horizontally on the floor. Grip action is by solid fingers at the front, hinged spring backed fingers at the rear. The attachment weighs 270 pounds. It can be employed to stack drums to the lift range of the truck on which it mounts.

BREVITY—Identify by IEN - 497 if you write the maker

FURNACES . . Information on design treated at length in 538-page textbook

John Wiley & Sons Inc.
440 Fourth Ave., New York 16, N. Y.

Fourth Edition of "Industrial Furnaces Vol. 1" by W. Trinks has been brought up to date by rewriting about 40 per cent of the text, revision of tables and calculations, and addition of 94 new illustrations. The book lists at $10. It describes design factors affecting furnace capacity, economy and thermal efficiency, strength and durability, movement of gases in furnaces.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 98

BREVITY—Identify by IEN - 498 if you write the maker

On the job!

Our volunteer speakers are saving thousands of lives *today* . . . in factories and offices, at neighborhood centers and at organization meetings all over this land . . . showing people what they can do to protect themselves and their families against death from cancer.

For information just telephone the American Cancer Society or address a letter to "Cancer," care of your local Post Office.

American Cancer Society

BREVITY—Identify by IEN - 499 if you write the maker

A FAN FOR EVERY NEED

ROBINSON "Wall Type" FANS

There is one of these ruggedly constructed heavy duty fans to suit every need — a small mill office, requiring only a few hundred cubic feet of air per minute — or a complete department or building requiring "thousands" of cubic feet of air per minute.

These units are assembled in square brattice frames to facilitate installation.

Place your ventilating problems in the hands of our engineers

ROBINSON VENTILATING CO.

Manufacturers of Fans and Ventilating Machinery for over fifty years.

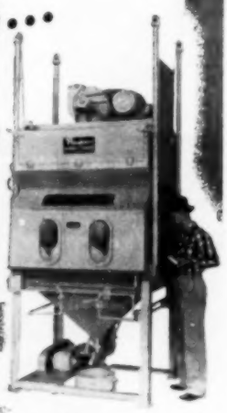
Ask for Bulletin No. 7200

ZELIENOPLE PENNSYLVANIA

BREVITY—Identify by IEN - 500 if you write the maker

PANGBORN Hydro-Finish gives better tool room results . . .

in a fraction of the time!



SIMPLIFY the manufacture and maintenance of tools, dies and molds with versatile Pangborn Hydro-Finish. It reduces usual costly handwork and produces a surface virtually free from directional grinding lines.

And on the production line, use Hydro-Finish to eliminate many tedious finishing operations. It reduces cost and time involved in buffing. It lessens fatigue failure and cuts manufacturing costs.

Hydro-Finish is the new, versatile impact blasting process that uses a fine mesh abrasive suspended in water. Tolerances are held to .0001 of an inch.

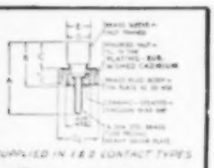
FIND OUT TODAY how Hydro-Finish can pay off for you. Write for Bulletin 1400-A to PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Maryland.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control.

Pangborn
BLAST CLEANS CHEAPER
with the right equipment for every job

▼ BREVITY—Identify by IEN - 502 if you write the maker ▲▼

Ideal for ANTENNA CONNECTIONS PHOTO-CELL WORK MICROPHONE CONNECTIONS



SUPPLIED IN 1 & 2 CONTACT TYPES

JONES
SHIELDED TYPE
PLUGS & SOCKETS

LOW LOSS PLUGS AND SOCKETS FOR HIGH FREQUENCY CONNECTIONS

For quality construction throughout, and fine finish, see diagram above.

101 Series furnished with ¼", .290", 5/16", ⅜", or ½" ferrite for cable entrance. Knurled nut securely fastens unit together. Plugs have ceramic insulation; sockets bakelite. Assembly meets Navy specifications.

202 Series Phosphor bronze knife-switch type socket contacts engage both sides of flat plug contacts—double contact area. Plugs and sockets have molded bakelite insulation.

For full details and engineering data ask for Jones Catalog No. 18

JONES MEANS PROVEN QUALITY

P-101-14

S-101

P-202-CCT

S-202-B

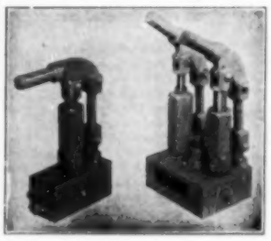
Jones HOWARD B. JONES DIVISION CINCH MANUFACTURING CORPORATION CHICAGO 24, ILLINOIS SUBSIDIARY OF UNITED-CARR FASTENER CORP.

▼ BREVITY—Identify by IEN - 503 if you write the maker ▲▼

HAND HYDRAULIC PUMP

Single and Double Designs

To 20,000 P. S. I.



Interchangeable Pistons ⅛-½-¾ inch

★

Integral Release Valve

★

Dual Pump Unit Reservoir 360 cu. in.

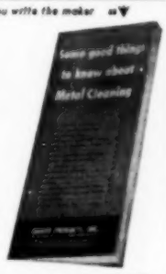
Pressure range is 3,000 to 20,000 P.S.I. Pipe connections ¼" N.P.T. Handle length is 18 inches. **Weight is 8** to 18 pounds. Unit can be bolted or **welded into** position.

WILLIAM S. PINE

1637 E. 22nd St., Los Angeles 11, Calif.

▼ BREVITY—Identify by IEN - 504 if you write the maker ▲▼

Which job would you like to improve?



Listed below are some jobs discussed in Oakite's new 44-page illustrated booklet on Metal Cleaning. Let us help you do them with better results, greater economy.

OAKITE PRODUCTS, INC., 18A Thames St., New York 6, N. Y.

Tell me (without obligation on my part) about Oakite methods and materials for the following jobs:

- ☐ Tank cleaning
- ☐ Machine cleaning
- ☐ Electrocleaning
- ☐ Pickling
- ☐ Pre-paint treatment
- ☐ Paint stripping
- ☐ Steam-detergent cleaning
- ☐ Barrel cleaning
- ☐ Burnishing
- ☐ Rust prevention
- ☐ Send me a FREE copy of your booklet "Some good things to know about Metal Cleaning"

NAME .....

COMPANY .....

ADDRESS .....

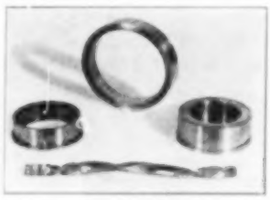
Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS · METHODS · SERVICE

▼ BREVITY—Identify by IEN - 505 if you write the maker ▲▼

BEARING . . Bronze bonded to steel for specified service

Source: BEAUIDEAL INC.
865-69 S. Water St., Saginaw, Mich.



Showing typical designs

New process developed by the company enables it to make a permanent non-mechanical bond between bronze and steel to produce a bearing suitable for radial and thrust duty. The bronze can be on either the inside or the outside of the steel backing.

The bearing can be heat treated in an overall temperature range between 1,100 and 1,600 deg. F. Typical applications are in bearings for aircraft engines, propellers, diesel engines, punch presses, construction equipment, machine tools, ship propeller shafts, bridges.

▼ BREVITY—Identify by IEN - 506 if you write the maker ▲▼

FLOORS . . Felt base material, asphalt saturated, rubber like coating

Source: ARMSTRONG CORK CO.
1012 State St., Lancaster, Pa.

Available on rated orders

Accotred is a new utility flooring material designed for use in Army barracks and in similar areas. It is resistant to attack by solvents and grease. It is flexible and has good appearance in place.

Two widths are 36 and 72 inches. Color is red. Application is with cement No. S-201 for grade-level concrete floors and with No. S-128 for suspended floors. The material is not recommended for installation below grade.

▼ BREVITY—Identify by IEN - 507 if you write the maker ▲▼

TRUCK . . Hinged adapter converts pallet truck for skid platform

Source: RAYMOND CORP.
3585 Madison St., Greene, N. Y.

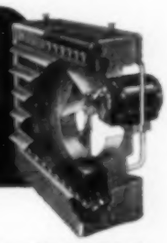
Hinges at the rear

New adapter hinges at the rear of the company's hand-operated pallet truck so it can be positioned horizontally as shown in the illustration or raised and locked vertically. When it is horizontal it can be run in under a skid platform and the truck-lift mechanism operated to pick up the platform for movement as required. When the adapter is in vertical position, it is out of the way to permit the truck to handle pallets in the usual way.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 508 if you write the maker ▲▼

Less Overhead When You HEAT Over Head with . . .



DUNHAM UNIT HEATERS

Why let ineffective heat distribution run up fuel bills—and overall operating expenses?

Why not look into these Dunham Horizontal Discharge Unit Heaters—see how they give you heat where you need it most . . . quietly.

Dunham's resiliently mounted motors; slow-speed fans; and sturdy one-piece fan shroud—all combine to direct air efficiently through individually adjustable louvers.

For complete information about long-lasting, expense-saving Dunham heaters, WRITE FOR BULLETIN 1301-11.

DUNHAM

C. A. Dunham Co.
400 W. Madison St., Chicago 6, Ill.
In Canada:
C. A. Dunham Co. Ltd., Toronto
In England:
C. A. Dunham Co. Ltd., London

HEATING SYSTEMS AND EQUIPMENT

▼ BREVITY—Identify by IEN - 509 if you write the maker ▲▼

FOR YOUR PANEL DIALCO

A NOVEL and UNIQUE CIRCUIT INDICATOR

DESIGNED FOR NE-51 NEON LAMP

For 110 or 220 volt circuits

The required resistor is an integral part of this assembly —"built-in."

RUGGED DEPENDABLE LOW IN COST

PATENTED: No. 2,421,321. Cat. No. 521306-097

WILL *YOU* TRY A SAMPLE?

Write on your company letterhead. We will act at once. No charge, of course.

SEND FOR THE 192 PAGE HANDBOOK OF PILOT LIGHTS

Among our thousands of Pilot Light Assemblies there is one which will fit your special conditions. Many are especially made and approved for military use. We pride ourselves on prompt deliveries—any quantity.

ASK FOR OUR APPLICATION ENGINEERING SERVICE

Foremost Manufacturer of Pilot Lights

The DIAL LIGHT COMPANY of AMERICA

900 BROADWAY, NEW YORK 3, N. Y. SPRING 7-1300

▼ BREVITY—Identify by IEN - 510 if you write the maker ▲▼

UNIVERSAL
INDUSTRIAL CONVEYOR

Low First Cost . . . .
Low Maintenance

- Removable sides to permit handling large cartons or parts.
- Motor totally enclosed inside conveyor body easily accessible through removable ventilating panel.
- Elevates to desired height with simple hoisting mechanism.
- Driven by means of roller chain to roller bearing equipped gear box.
- Main drive shaft and idler pulley operate on double-sealed ball bearing.
- Standard belt width, 12 inches. Other widths can be furnished to meet your requirements.
- Belt speed, 74 F.P.M.—adjustable if desired.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

▼ BREVITY—Identify by IEN - 511 if you write the maker ▲▼

more than 40,000 satisfied owners of

HYSTER
Tractor Winches

Sold and Serviced for more than 20 years by CATERPILLAR-HYSTER dealers all over the world

A high percentage of Caterpillar Diesel tractors are equipped with Hyster winches.

Hyster towing winches are used in these basic work classifications: CONSTRUCTION, INDUSTRIAL, LOGGING, MINING, OIL and GAS, MILITARY, AGRICULTURE, TRANSPORTATION, GOVERNMENT.

Any Caterpillar dealer will gladly tell you about Hyster tractor winches.

HYSTER TOWING WINCHES

MOVE heavy equipment.

RESCUE heavy tools or pieces of equipment that are mud-bogged.

PULL the tractor itself out of mud or other situations that have incapacitated the tractor.

INSURE against work stoppage or down time on any project using equipment.

ASSIST in stump and land clearing operations.

INCREASE production in logging operations through the use of skid logging methods.

GROUND SKID or pen skid logs.

YARD logs.

PERFORM recoverable lifting jobs in conjunction with crane attachments.

HYSTER COMPANY

2916 N. E. Clackamas Street
Portland 8, Oregon
1616 North Adams Street
Peoria 3, Illinois

World's Largest Manufacturer of Tractor Winches

BREVITY—Identify by IEN - 512 if you write the maker

REALOCK FENCE

GIVES *Positive* PROTECTION

Positive protection for your grounds and property is assured with Realock Fence. In addition, all fittings, hinges and locking devices have bolts on the inside, secure from outside tampering.

Noted for its rugged construction and long-lasting weather resistance, Realock Fence can be depended upon for years of dependable, trouble-free service.

For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION
Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION
Oakland, California
WICKWIRE SPENCER STEEL DIVISION
Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION CF&I
BRANCHES IN ALL KEY CITIES

BREVITY—Identify by IEN - 513 if you write the maker

Speed pipe joining with *this*

There's no easier way to join pipe than with Dresser Style 65 Fittings. And they stay tight despite vibration and deflection. No threading to weaken pipe wall. Sizes ½" to 2" pipe diameter. Write for STYLE 65 CATALOG.

Complete line of tees, elbows, adaptors, branch tees, etc.

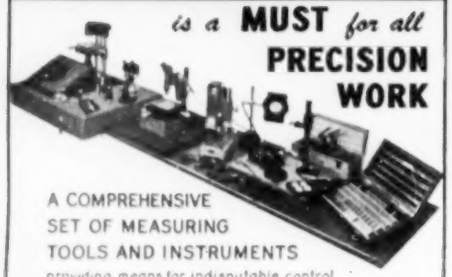
DRESSER "NO-THREAD" FITTINGS

Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco.

BREVITY—Identify by IEN - 514 if you write the maker

SCHERR LIMITED BUDGET INSPECTION LABORATORY

is a **MUST** *for all* **PRECISION WORK**



A COMPREHENSIVE SET OF MEASURING TOOLS AND INSTRUMENTS providing means for indisputable control of all precision work.

THICKNESS, DIAMETERS, LENGTHS, PROFILE, SHAPE AND FINISH — Simple in construction, reasonable in price, and fully reliable for unerring accuracy and wherever possible independent of the human element of "feel".

SAFEGUARD YOUR PRODUCTION

WRITE FOR DETAILS TO...
GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
198-C LAFAYETTE ST. • NEW YORK 12, N.Y.

For Your Special Information

BREVITY—Identify by IEN - 515 if you write the maker

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

THOMAS' REGISTER . . 1952 edition lists all products and their makers

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

The three books illustrated, with a fourth, not shown, that contains a complete finding index, comprise the 8,000-page Thomas' Register to which we refer in the footnote at the bottom of the editorial columns in Industrial Equipment News. We have reproduced that footnote for emphasis at the top of this "page-50" column with our announcement that the 1952 edition is now coming from the presses and is available. Literally the footnote statement is true in application to the complete Register.

You can make quick reference to those of the approximate 100,000 United States manufacturers who make any product you can think of, if you have the set of books at your desk. You can find the addresses, the size ratings or the companies, with description and advertising defining the particular characteristics of each product under 85,000 classifications.

Trade names are included in a separate section, thousands of them, all in alphabetical order with the name of the company owning each and the company address. In this same section is an alphabetical list with addresses, ratings, affiliations, branches and, in some cases, executive personnel of the principal manufacturers in the United States.

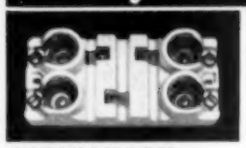
List price for the set of books is $15, plus transportation charges. You can make reservation now for billing later by writing to Mr. C. W. Scoltock, Circulation Manager, at the address given at the start of this item. Or, if you prefer, check the IEN number on your Reader Service form.

U. S. SAVINGS BONDS IEN 8-1

You can perform a very important service, if your plant is not now on the Payroll Savings Plan, by contacting the Savings Bond Division, U. S. Treasury Department, Suite 700, Washington, D. C. for a copy of the plan showing how to put all of your workers into the Plan in their interests.

BREVITY—Identify by IEN - 516 if you write the maker

low cost maintenance for high cost circuits



SHAWMUT DIAMOND S CUT-OUTS

CARTRIDGE & PLUG TYPE.

Supplied as standard above 30 amps with Shawmut SHUR-GRIP pressure connectors and spring action fuse clips. Available in Porcelain, Black Molded Composition and Slate. Single Double and Triple Pole types. Also, 3-wire with 2 branches; Fused and Unfused Neutral; Special Live Front type. Ask for Bulletin 2507.

Shawmut FUSE TERMINALS
National Electrical Code Standard
Ask for Bulletin No. 506.

Shawmut CLIP LOCK CLAMPS
No tools are required
Ask for Bulletin No. 511.

Shawmut FUSE CLIPS
National Electrical Code Standard
See Bulletin No. 508.

Shawmut FUSE PULLERS
Two sizes—Pocket and Giant
See Bulletin No. 511.

Shawmut WIRE LUGS
N. E. Code Standard to 600 Amperes inclusive.
Send for Bulletin No. 508.

Shawmut TESTED FUSE WIRE, RIBBON & LINKS
Standard for the industry.
Ask for Bulletin No. 509.

Famous for quality since 1895, Chase-Shawmut products set standards for the industry. Count on them for positive protection wherever maintenance is required.

THE **CHASE-SHAWMUT** CO.
ONE MERRIMAC STREET • NEWBURYPORT, MASSACHUSETTS

BREVITY—Identify by IEN - 517 if you write the maker

The Joint You Can Install in Minutes . . . and Forget

Type "S" ROTARY UNION

ROTARY UNIONS
(TRADE NAME)

Standard ROTARY UNIONS are the most efficient connection to revolving shafts or drums for heating or cooling purposes . . . for applications such as Steam up to 150 P.S.I., Hot Oil to 500° F, Coolants, Air, Gases, Water, Brine, Vacuum, Alternate Mixtures, at speeds up to 1000 R.P.M. Special models for higher speeds, pressures, and Dowtherm.

Each ROTARY UNION is a self-contained unit and can be installed in a few minutes. Its novel and accurate construction takes the strain from moving and sealing parts, thus lengthening its effective life far beyond that of other joints.

"Where Good Connections Count"

Write for full information or for free consultation. Prompt deliveries from stock.

PERFECTING SERVICE CO.
332 Atando Ave. Home Office and Factory, Charlotte, N. C.
Offices in Chicago • Cleveland • Philadelphia • Providence • Jersey City

BREVITY—Identify by IEN - 518 if you write the maker

SLITTERS AND ROLLWINDERS

For all types and sizes of roll-wound products

From cellophane to sandpaper, from bandages to brake lining, *Camachine* experience leads the way in every field of roll production. There's a *right Camachine* for all types of paper or paperboard; textiles, rubber, foil or plastic; plain, coated, laminated or tacky-surfaced materials. *Camachines* are engineered for dependable, top-quality roll production at record-breaking speeds. For information and literature regarding roll production equipment for any type of material, write to:

CAMERON MACHINE CO.
61 POPLAR ST., B'KLYN 2, N.Y.

Camachine
First in roll production equipment

BREVITY—Identify by IEN - 519 if you write the maker

ANY RPM by dial control

VARIDRIVE

US MOTORS

An all-in-one power drive, performing the work of a motor, speed changer, cone pulleys, rheostat or controller and gear box. Compact. Light weight. All the speeds you want, instantly, by turning a dial. Low-priced. Asbestos-protected windings. ¼ to 10,000 rpm.

Write for Bulletin 1601

U.S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Cal. Milford, Conn.

BREVITY—identify by IEN - 520 if you write the maker

step up production with

STOW flexible shaft MACHINES

These dependable STOW FLEXIBLE SHAFT MACHINES save production time . . . speed up output . . . help lower production costs. Variable Speed Models shown are easily portable . . . cut down operator fatigue and increase on the job efficiency!

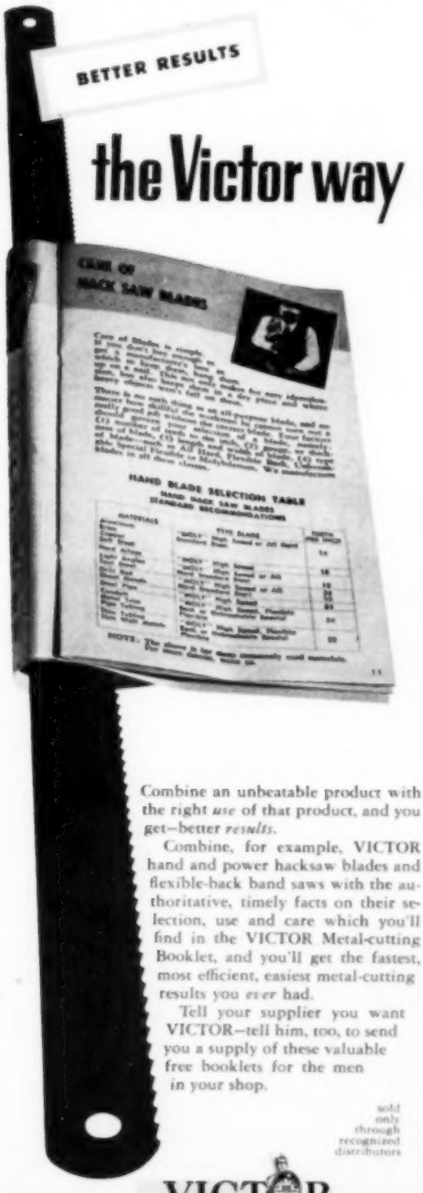
Constant Speed Models available. Also complete line of accessories designed to increase the utility of STOW Flexible Shaft Machines!

WRITE TODAY

for your free copy of CATALOG SI

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

BREVITY—identify by IEN - 521 if you write the maker



Combine an unbeatable product with the right *use* of that product, and you get—better *results*.

Combine, for example, VICTOR hand and power hacksaw blades and flexible-back band saws with the authoritative, timely facts on their selection, use and care which you'll find in the VICTOR Metal-cutting Booklet, and you'll get the fastest, most efficient, easiest metal-cutting results you *ever* had.

Tell your supplier you want VICTOR—tell him, too, to send you a supply of these valuable free booklets for the men in your shop.

sold only through recognized distributors

VICTOR
SAW WORKS, INC. • MIDDLETOWN, N.Y., U.S.A.
Makers of Hand and Power Hack Saw Blades, Frames and Metal Cutting Band Saw Blades

BREVITY—identify by IEN - 523 if you write the maker

MARKING . . Self adhesive tape transparent plastic over colored back

Source: LABELON TAPE CO.
448-52 Atlantic Ave., Rochester 9, N. Y.

Just press in place and mark

New widths, measuring 1/4, 1/2 and 2 in., have been added to the company's tape, previously described IEN 280-51. Writing, printing or typing pressure on the transparent plastic face causes lines to appear in sharp relief against the lighter background. They cannot be obliterated by rubbing since they are on the inside face of the plastic. The tape is available in small dispensers in widths to 3/4 in. and in 300 and 500-in. rolls to fit into a dispenser. The company also is prepared to supply the tape to specification with initial printing and lines that can be filled in as on a form.

The tape is made of two layers of acetate plastic with a white waxy substance laminated between them. The under side of the bottom colored layer is coated with a pressure-sensitive adhesive that will adhere upon contact to any hard surface. Pressure on the top clear layer destroys the white substance and exposes the bottom colored layer to view. In this manner the writing appears in the color of the bottom layer under the protecting transparent face. The 1/4-in. tape is available in one color, red. The other six can be specified in black, blue, red or green.

BREVITY—identify by IEN - 524 if you write the maker

WELDING . . Press type machine to operate multiple spot electrodes

Source: E. W. BLISS CO.
1373-77 Raff Road S. W., Canton 10, Ohio

User finishes assembly

Work to be spot welded is positioned on a die on the lower head of this new press-type welding machine. The work rests on the welding tips that face upward from this head. When the driving clutch is engaged the head moves upward to bring the work into contact also with fixed welding electrodes secured in the upper part of the housing. The slide dwells in upper position and applies pressure between the electrodes and the work until the welding operation is completed. The drive is divided into thirds to include one for the upstroke, two for the dwell and three for downstroke.

Drive includes a pneumatic friction clutch with a flywheel and motor at the top of the housing. Connection is by a long eccentric rod to the head-actuating mechanism in the lower part of the housing. Work is accessible from the front or rear and can be fed in and taken away on conveyors. Head dimensions are 12 in. front to back and 42 to 84 in. right to left.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 50

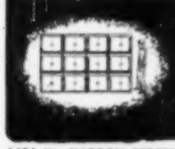
BREVITY—identify by IEN - 525 if you write the maker

GRIEVE-HENDRY PORTABLE ELECTRIC OVENS...

Standard Models For Every Special Need!

Model CR-1
10 cu. ft. capacity—30" wide x 25" deep x 24" high. Removable shelves and drip pan. . . . . $79.50 f.o.b. Chicago

Portable. Costs less than 5c per hour to operate. Adjustable temperature control to 225° F. Fan driven forced air circulation. Uniform temperature throughout. Plugs into any 110V wall outlet—no special wiring required.



Can be used in a group or bank. Use them on the production line —save handling—hauling.

Other standard models with temperature ranges to 1000°F. available. Write for literature.

GRIEVE-HENDRY CO., INC.
1654 W. HADDON STREET CHICAGO 22, ILL.

BREVITY—identify by IEN - 526 if you write the maker

YOU CAN DO so many different jobs — so much better — so much *faster* with a DELTA UNISAW

★ RUGGED CONSTRUCTION FOR STEADY PRODUCTION
★ BIG CAPACITY
★ HIGH SPEED
★ EXTREME ACCURACY

Just what the name implies . . . a truly universal saw. It's a 10" tilting arbor saw that makes a 1½" cut . . . tilts to 45° . . . cuts to center of a 50" panel . . . makes perfect mouldings . . . cuts dadoes and tenons accurately . . . at high speed and low cost.

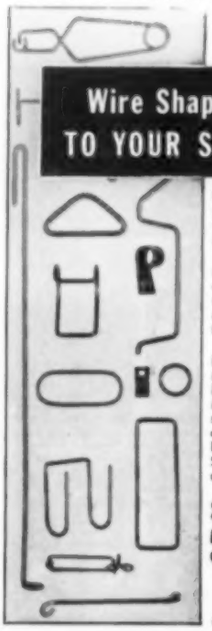
The initial investment for this time-saving, money-making Unisaw is less than you would think. Ask your Delta dealer about the Unisaw today.

Meanwhile, write for the complete Delta catalog that describes it and other fine Delta tools.

There's a Delta Power Tool for Your Job - Wood or Metal Working
53 MACHINES — 246 MODELS — MORE THAN 1300 ACCESSORIES

DELTA MILWAUKEE — DELTA POWER TOOL DIVISION
Rockwell MANUFACTURING COMPANY
618A E. VIENNA AVENUE, MILWAUKEE 1, WISCONSIN

BREVITY—identify by IEN - 527 if you write the maker



Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
(Formerly JESCHKE Wire and Specialty Company)
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

BREVITY—identify by IEN - 528 if you write the maker

5 BIG REASONS

Why Wells Band Saws slash metal cut-off costs

Above is the Wells No. 8, shown with wet cutting system. It offers a capacity of 8" x 18", rectangular, 8" dia., rounds.

1. Fast, Accurate Action
2. High Job Productivity
3. Low Operating Cost
4. Real Blade Efficiency
5. Long, Dependable Service

YOU are always ahead when you handle your cut-off jobs on "Wellsaws." The Wells Band Sawing method will not only reduce your operating costs, but also give you greater job efficiency — better cuts, and real dependable service. There is a size and type for every need and every budget. Capacities range from 3½" x 6" to 48" x 48". Write for descriptive literature.

Products by Wells are Practical

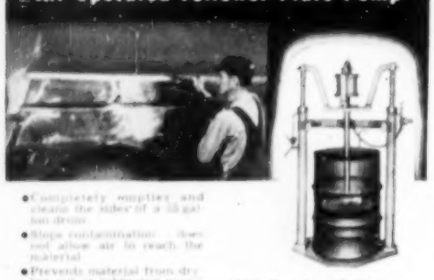
Wells

METAL CUTTING BAND SAWS
WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

▼ BREVITY—Identify by IEN - 529 if you write the maker ▲▼

Fast... Sure... Time Saving Way
TO SEAL WELD SEAMS!

VERSATAL "POWER RAM"
Air Operated Follower Plate Pump



- Completely empties and cleans the sides of a 55-gal. ion drum
- Stops contamination — does not allow air to reach the material
- Prevents material from drying out or "skinning over"
- Saves important money on barrel cleaning
- Uses the atmospheric pressure on the materials assures safe, positive prime

Free — write now for literature giving full data. Address Alemite, Dept. B-12, 1830 Diversey Pkwy., Chicago 14, Ill.

A DIVISION OF SW INDUSTRIES

ALEMITE Versatal
GREASE PUMP EQUIPMENT

▼ BREVITY—Identify by IEN - 530 if you write the maker ▲▼

Let WATLOW make things HOT FOR YOU!

WATLOW Electric STRIP HEATERS

For simple warm-up — or sustained high heat—there's a Watlow Strip Unit of the size, shape, voltage or wattage "tailored" to your specific needs.

Custom Designed Heat Units
If you have a special heat problem, send us a blueprint or pencil sketch of your job. Our engineering dept. will send you prompt recommendations and quotations, without obligation.

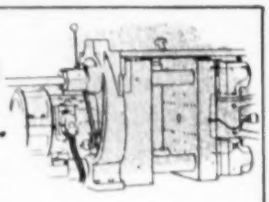
FREE CATALOG of strip, band, cartridge, immersion heaters.

SPECIALISTS IN ELECTRIC HEATING UNITS

WATLOW
ELECTRIC MANUFACTURING COMPANY
1310 N. 23d St. St. Louis 6, Mo.

▼ BREVITY—Identify by IEN - 531 if you write the maker ▲▼

When the Pressure's On ...Specify Superior Tubing



Whenever there's a tough job for fine small tubing to do, Superior is the tube to specify.

An example is found in hydraulic applications for which Superior's technology in tubing produces seamless steel tubing to meet all Joint Industry Conference Hydraulic Standards for all pressure ranges from 0 to above 3,000 lbs./sq. in.

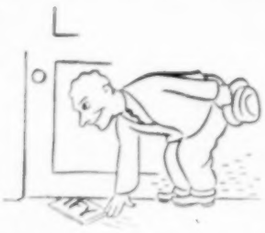
For complete information and specifications on Superior Hydraulic Tubing write today for Bulletin 38. For general information on Superior production ask for Bulletin 32. Address Superior Tube Company, 2016 Germantown Ave., Norristown, Pennsylvania.

Superior
THE BIG NAME IN SMALL TUBING

All analyses .010" to ½" O.D.
Carbon analyses (.035" max. wall) up to 1½" O.D.

West Coast: Pacific Tube Company
5710 Smithway St., Los Angeles 22, Calif. . . . ANgelus 2-2151

IDEAS FOR YOU



Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

▼ IEN - 532 ▲▼

Hard as glass, strong as steel, easy to look at, any color with green recommended, inexpensive to make, everlasting, non-glare, non-squeak, all combine to define new porcelain-enameled-laminated-on-plywood-panel chalkboard according to Porcelain Enamel Institute.

▼ IEN - 533 ▲▼

Transparent plastic sheet, Bakelite's Vinylite Rigid, is being used by a paper box maker to line up for register between dies and printing plates. Lines made by the dies with carbon paper on the sheet show through, serve as guides. Sheet could be similarly used to transfer anchor points from press bolsters.

▼ IEN - 534 ▲▼

Hardboard with a smooth surface made by compressing wood fibres into a thin hard sheet is bonded to an inner core of plywood to make a new construction material known as Plyron as reported by Douglas Fir Plywood Association. Concrete forms, kitchen cabinets, table tops are applications.

▼ IEN - 535 ▲▼

Sanding machine employing a coated-abrasive belt presents the belt in an inverted U-shape at the top of a supporting stand over which work pieces can be applied for either free-running or platen-backed sanding. Bomb straps, horn rings, gas tank necks, tin snips, heavy shear rings are representative work pieces. Behr-Manning tells us about the machine, does not make it, but is prepared to supply its 4-sheet Bulletin No. 10 under title "Tongue Sander" in which working drawings show you how to make it for your own purpose.

▼ IEN - 536 ▲▼

Bearings for high speed, heavy load and high temperature may employ tungsten carbide if experiments now being carried out are continued into production. Carboloy reports successful application with carbide-to-carbide contact in sleeve design for grinder spindles, gasoline-pump pivots, machine-tool ways and slides, shaft bearings in balancing machines.

▼ IEN - 537 ▲▼

One pair of plastic lenses for use against sun glare and a second interchangeable pair for night driving apply in a plastic-metal frame under the trade name Eye Savers. Company, by same name, has put on a list price of about $10. You pull and push lightly to remove and position the lenses.

▼ BREVITY—Identify by IEN - 538 if you write the maker ▲▼

Cut STITCHING and TYING COST THE INLAND WAY

Engineered for your special needs, Inland Speed Stitchers, Tying Machines and Quality Wire have long been the answer to Stepped Up Production and Reduced Packaging Cost. There are many variations of both machines and wire to select from.

INLAND SPEED-STITCHERS
MANUAL & AUTOMATIC
All types: — Seam, Bottom, Metal, Straight Arm, Sward or Combination Models. 150 to 400 staples per minute. Reversible parts for minimum replacement and upkeep.

INLAND WIRE TYING MACHINES
Many models to choose from for light to heavy duty tying. Sturdy, fool-proof and compact. Put light package tying on a production-like basis.

INLAND SPEED-FLO STITCHING WIRE
Highest quality wire processed the INLAND way for uniform flow from spool to stitcher head. Copper or galvanized comes in 50, 25, 10 or 5 lb. coils.

INLAND SPEED-FLO TYING WIRE
Shipped in convenient dispenser-type package. No kinks or twist as wire feeds from carton to machine. For floor, table or wall mounting —it speeds operations.

Send your stitching or wire tying problems to Inland today, without obligation.

INLAND WIRE PRODUCTS CO.
3943 S. Lowe Ave. Chicago 9, Ill.

▼ BREVITY—Identify by IEN - 539 if you write the maker ▲▼

SKINNER STAINLESS STEEL SOLENOID VALVES

Small size — Rugged — Large capacity

The small size of Skinner Solenoid Valves belies their rugged construction and unusually large capacity. These valves have a standard range from 5 to 250 p.s.i., and a special range from 5 to 850 p.s.i., and can be used for gaseous or liquid media. Their soft insert seat prevents leakage and positive action is assured by spring loading. Skinner Valves may be used in any position, with pipe connections furnished to suit specifications. Power consumption is 10 watts max. Special coils for high humidity or high temperature applications can be supplied. Standard models are approved by Underwriters' Laboratories.

Write for Bulletin No. 501

SKINNER ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
139 Belden Ave., Norwalk, Conn.

▼ BREVITY—Identify by IEN - 540 if you write the maker ▲▼

first* IN INTERIOR FIRE PROTECTION

ALLENCO

OFFERS

PROMPT DELIVERY
WIDE SELECTION
TOP QUALITY

FIRE EXTINGUISHERS and SUPPLIES

Approved for fires of Class A, A1, B, B1, C, C1—soda-acid, foam, V/L, pump, gas—several sizes and finishes, also cabinets

*Voted 1st by engineers, architects, contractors, distributors; most widely used. Also complete line of hose fittings for all purposes. Write for catalog or consulting service.

Established 1887
W. D. ALLEN Manufacturing Co.
CHICAGO 6 - NEW YORK 7

▼ BREVITY—Identify by IEN - 542 If you write the maker ▼

SEND for this booklet on Vibration Control by Vibra-Mounts. It describes the new, simple, economical way to obtain up to 85% reduction in transmitted vibration, increasing plant efficiency, protecting machines, instruments, buildings and personnel. Vibra-Mounts can be installed quickly by superintendents and maintenance men.

Booklet sent FREE on request.

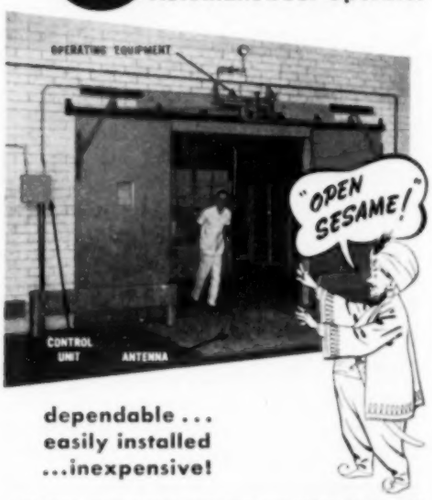
American Felt Company
TRADE MARK

GENERAL OFFICES: 18 GLENVILLE ROAD, GLENVILLE, CONN.
SALES OFFICES: New York, Boston, Chicago, Detroit, Cleveland, Rochester, Philadelphia, St. Louis, Atlanta, Dallas, San Francisco, Los Angeles, Portland, Seattle, San Diego, Montreal — PLANTS: Glenville, Conn.; Franklin, Mass.; Newburgh, N. Y.; Detroit, Mich.; Westerly, R. I. — ENGINEERING AND RESEARCH LABORATORIES: Glenville, Conn.

▼ BREVITY—Identify by IEN - 543 If you write the maker ▼

here's the most modern — most efficient automatic door operator ever!

the NP "Electro-Field"* Automatic Door Operator



dependable . . . easily installed . . . inexpensive!

National Pneumatic's new "Electro-Field" Automatic Door Operator offers many important advantages over ordinary equipment, yet its cost is substantially less than even the conventional photoelectric type door operator.

The "Electro-Field" Automatic Door Operator employs a balanced high-frequency electrical system with a floor-installed antenna. Unbalancing of the electrical field by a person passing over the antenna actuates the operating equipment, thus opening the door. The door closes automatically after safe clearance, with no slamming. Timing is adjustable to individual requirements. Both opening and closing are performed by air pressure.

NP's "Electro-Field" controls all types of sliding, swinging or folding doors. It is pre-piped and pre-wired for easy installation. Doorways and approaches are kept perfectly clear, for no stanchions are used. The "Electro-Field" is precisely engineered and built. It stays in adjustment and gives long, trouble-free service.

Made by National Pneumatic Company, for nearly fifty years the principal supplier of door control equipment for railroads and transit systems, where dependability is of paramount importance. NP also makes a fully automatic *Photoelectric* Door Control, and two types of semiautomatic door controls — complete details will be forwarded on request.

*Trade Mark

NATIONAL PNEUMATIC CO., INC.
125 Amory Street, Boston 19, Massachusetts
WORLD'S LARGEST MANUFACTURER OF DOOR CONTROL EQUIPMENT

IDEAS FOR YOU — Continued

▼ IEN - 545 ▼

Food, beverages and tobacco are dispensed by 571 coin machines which have replaced wagon canteens in the RCA Camden plant. The machines supply service at meal time and also dispense fifteen items for employee purchase during rest periods and between shifts.

▼ IEN - 546 ▼

Entry blanks are available on request to Ohio Crankshaft to compete in its "Economy in Product" contest. The blank carries rules covering descriptive articles of 250 words or more on increasing production or decreasing costs with the company's induction heat-treating equipment. First prize is $1,000. Sixth to tenth prizes are $50. Contest closes June 1.

▼ IEN - 547 ▼

Accuracy is within 0.1 per cent over a seven-to-one speed range for a new General Electric drive to apply on equipment spinning synthetic yarns. An electronically-regulated ac. adjustable-speed motor drives a variable-frequency alternator which supplies current to small synchronous motors for direct connection on the equipment. First of the drives is in operating in a mill. Twenty others are being built.

▼ IEN - 548 ▼

Want to build a dark room? You can with the aid of a new 36-page Eastman Kodak booklet, "Darkroom Construction for Professional, Photomechanical and Industrial Use." It is illustrated with photographs, charts, drawings. It advises on procedure and selection of materials and equipment. Your investment in the booklet is 35 cents.

▼ IEN - 549 ▼

Plastic encased bolts and nuts, using Geon-based plastisol on carbon steel, are replacing stainless-steel fastenings and special rubber sealing gaskets in construction of corrosive chemical baths. Steere Enterprises is the manufacturer employing Goodrich Chemical Company's Geon paste resin.

▼ IEN - 550 ▼

True appreciation on the part of educators for things that industry is achieving is the aim of a Business-Industry-Education Day in Cincinnati, Ohio. Trailmobile Inc. was one of eighty Cincinnati manufacturers playing host to 1,600 educators recently. Those who visited the plant watched the company in action, listened while the executives explained "how" and "why".

▼ IEN - 551 ▼

Fractions by 64th to one inch are printed in a circle on a 3 by 5-inch celluloid card. A disc inside the circle carries one window to read the decimal equivalents and another to read tap diameter, threads per inch, diameter of the tap drill. Dayton Rogers offers it on request.

▼ IEN - 552 ▼

Hand extinguishers are carried about one of the Ford plants in a little Kalamazoo platform truck equipped with a box body. The truck operator is charged with the responsibility of seeing there are no "dead" extinguishers at any of the stations in the plant. The little truck carries a good load of Kidde replacement units. It is small enough to go through doorways, narrow aisles.

▼ BREVITY—Identify by IEN - 553 If you write the maker ▼

Faster, HEAVY DUTY Milling on STEEL and CAST IRON

The "KF" Face Kennamill features long-lasting, solid Kennametal blades securely locked into position by easily-accessible stud-type, heat-treated alloy steel wedges that can be pulled up without movement of blades, and released without prying. Freeze-proof — no threads in body! Blades and wedges are interchangeable — fit any slot in this precision-built cutter.

Suitable for faster, lower cost production milling on steel, and heavy duty milling on cast iron. For complete particulars, write for Catalog 51—Supplement 2.

KENNAMETAL Inc.
Latrobe, Pa.
MANUFACTURERS OF SUPERIOR CEMENTED CARBIDES AND CUTTING TOOLS THAT INCREASE PRODUCTIVITY

▼ BREVITY—Identify by IEN - 554 If you write the maker ▼

FOR SALE:

1 Assembly Press
1 Die-Cast Trimmer
1 Punch Press
1 Crimping Press
1 Testing Machine
1 Die-Stamping Unit
1 Staking Press
1 Swager
1 Deep-Draw Press
1 Blanking Unit

You get ALL 10 - and more - in one MULTIPRESS

—for Multipress is tops in versatility. Its speedy, accurate, oil-smooth efficiency and *power control* adapt quickly to dozens of precision jobs when properly tooled. One to 50-ton sizes and capacities; Index Table Feeds and other standard accessories for special jobs. Write today for full details.

DENISON HydrOILics

The DENISON Engineering Co.
1160 Dublin Rd., Columbus 16, Ohio

▼ BREVITY—Identify by IEN - 555 If you write the maker ▼

CLANCY SURE-GRIP HOSE CLAMPS
Can be Reused

. . . can be removed and replaced time after time without injury to the hose, clamp, nut or bolt.

Clancy Sure-Grip Clamps keep their shape, hold any pressure the hose will stand. All parts separately galvanized — no rough edges, won't rust or stretch. For air, gas, water or steam. Every size to fit any hose — foreign or domestic. Write for prices.

J. R. CLANCY INC.
1008 W. Belden Ave.
SYRACUSE 4, N. Y.

▼ BREVITY—Identify by IEN - 556 If you write the maker ▼

DON'T LOSE VALUABLE DUST!

Buell's wide experience in the recovery of Valuable Dust can help you boost your plant's efficiency now—when peak efficiency is really needed!

To learn how a Valuable Dust Recovery System can be designed to suit your plant's special requirements, write today for full information on the *3 basic systems* of efficient dust recovery and dust collection. Ask for the new, illustrated Buell "Dust Recovery" bulletin. Buell Engineering Co., Dept. 22-A, 70 Pine Street, New York 5, New York.

buell
Engineered Efficiency in Dust Collection

▼ BREVITY—Identify by IEN - 557 if you write the maker ▼

SAVE MONEY! SEE US BEFORE YOU DESIGN IT! Write, wire or phone your needs today! Chances are we have just the mould you want! Lowest possible prices — prompt, efficient service. Request new 44 page catalog, today.

LAVELLE Rubber Company
1811 W. Hubbard St., Chicago 22, Ill.

▼ BREVITY—Identify by IEN - 558 if you write the maker ▼

JOY WG-9 "Industrial-Air" COMPRESSOR

Saves space — gives you top efficiency — built for heavy duty

- ★ Full force-feed lubrication of all working parts
- ★ Replaceable cylinder liners and crosshead guides
- ★ Small floor area and simple foundation requirements
- ★ Anti-friction main bearings

17 Sizes—99.6 to 881 CFM
20 to 150 psi
FREE BULLETIN

For complete details, write for new Bulletin A-45, or...

Consult a Joy Engineer

WAD 13090

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED, GALT, ONTARIO

▼ BREVITY—Identify by IEN - 559 if you write the maker ▼

There are many manufacturers whose names are not familiar to the consumer public, but whose companies are indirectly contributing to their acceptance of the nation's greatest products.

Such is the case of Ohio Gear in supplying Speed Reducers to the American Air Filter Co., Inc., of Louisville, Ky., the world's largest manufacturer of air cleaning and dust control equipment. American Air Filter ship their products thousands of miles from the factory, including foreign ports in Mexico, South America, Europe, South Africa, India and Australia.

It takes a lot of faith and confidence in a Speed Reducer to keep your product and good name operating at such great distances. Protect YOUR product and operation with Ohio Speed Reducers and Ohio Gears.

ESTABLISHED 1915
THE OHIO GEAR COMPANY
1345 EAST 179th STREET • CLEVELAND 10, OHIO

OHIO GEARS

▼ BREVITY—Identify by IEN - 560 if you write the maker ▼

COMMUNICATING . . Head phone for frequency from 100 to 7,000 cycles

Source: PERMOFLUX CORP.
4902 W. Grand Ave., Chicago 39, Ill.

Features precision

Type DHS-17 is a new high-fidelity dynamic head phone for applications requiring clear, precise sound reproduction free from extraneous noises. The assembly includes a Series-DHA headband, a set of the ear phones, a plug-in connection cord and any one of four styles of ear cushions for use under specific conditions. Applications are in connection with broadcasting, television and recording, monitoring and auditory training.

▼ BREVITY—Identify by IEN - 561 if you write the maker ▼

WOODWORKING . . Circular saw blade is square with teeth at the corners

Source: CLARK & SAWYER INC.
602 Mateo St., Los Angeles 21, Calif.

About $4.50 to $14

Square outline characterizes this new Squared Circle saw blade. It is made of chrome nickel steel in sizes from 6 to 16 in. measured diagonally between two sets of teeth. It is available in combination and rip design and in standard sizes and shapes of central holes for an arbor. The design is intended to minimize overheating and number of teeth that require sharpening.

▼ BREVITY—Identify by IEN - 562 if you write the maker ▼

GAGES . . Textbook on the subject also is a training manual for inspectors

Industrial Press
148 Lafayette St., New York 13, N. Y.

C. W. Kennedy, Quality Control Engineer for Federal Products Corporation, is author of new 512-page "Inspection and Gaging". List price is $7.50 plus postage. The book is intended as a training manual and reference. It describes the place of inspection in industry, methods and equipment for manual and automatic gaging, methods of using inspection equipment, duties of inspection personnel. Readable text is accompanied by 319 illustrations. We like the description on the wrong way to train a new inspector.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 563 if you write the maker ▼

CUTS
CORROSION
LOSSES

★ TYGON plastic Paint protects metal, concrete and wood from attack by acids, alkalies, oils, fresh or salt water. Tough, flexible film resists impact. Non-contaminating to solutions.

U. S. STONEWARE
Since 1865 • Akron 9, Ohio

90C

▼ BREVITY—Identify by IEN - 564 if you write the maker ▼

Mystik Tapes

...for Industry, for Defense

The toughest, tightest gripping all-around cloth tape ever made. Mystik Tape No. 5800C handles protective problems under every condition—water, salt spray, abrasion. Does numerous holding, sealing, identifying jobs. Made to conform with government spec. JAN-P-127, Type I, Grade B.

WRITE for full information and free sample roll to Mystik Adhesive Products, 2644 N. Kildare, Chicago 39, Illinois

▼ BREVITY—Identify by IEN - 565 if you write the maker ▼

Design and Process Engineers:

Now! A RUGGED, PRE-DETERMINING COUNTER TO AUTOMATICALLY RE-CYCLE YOUR ELECTRIC CONTROL CIRCUITS

WHAT IT DOES: The "Cycle-Monitor" momentarily opens or closes electric circuits to motors, magnetic brakes, signals, relays, solenoids, etc., based on a predetermined count. Repeats automatically—no count reading, checking or manual re-setting between cycles.

HOW IT OPERATES: Count pickup may be *mechanical* (based on rotation or stroke), or *electric* (through sensitive switch, photo-electric cell, etc.).

CONTROL RANGE: May be set for *any count* from 1 to 2,000, and *all even numbers* from 2,000 to 4,000. Extended ranges also available.

OPERATING SPEED: *Rotary counter*—up to 5,000 counts per min.; *stroke counter*—up to 1,000 counts per min.; *solenoid-operated counter*—up to 350 counts per min. Intermittent or continuous operation. No pause for re-set.

HOW CYCLE IS SET: Two simple adjustments instantly set unit for the desired count. Can be set in approximately 5 seconds.

ADVANTAGES: Simplifies machines and processes—eliminates change gears, complicated cam systems, awkward mechanical stops, intricate control circuits, etc. Minimum set-up time.

Write Now for Bulletin 202

COUNTER & CONTROL CORPORATION
5231 W. Electric Ave., Milwaukee 14, Wis.

▼ BREVITY—Identify by IEN - 566 if you write the maker ▼

CAN WE SERVE YOU

We make PRECISION PAPER PRODUCTS at a saving to Industry

TUBE SHAPES

- LENGTHS
- DIAMETERS
- WALL THICKNESSES
- FINISHES

SONOCO PRODUCTS COMPANY
HARTSVILLE, S. C. MYSTIC, CONN.

BREVITY—Identify by IEN - 567 if you write the maker

Efficient Materials-Handling at the "Grass Roots" level with

Colson CASTERS

Model 4 807.65 Swivel fork caster—ideal for medium weight industrial equipment

● No matter how modern or streamlined your truck fleet, it's no better than the wheels and casters it rolls on. Surprising—how a few dollars spent for Colson casters can increase the efficiency of hundreds or thousands of dollars worth of rolling stock. There's a Colson for every need—from light casters for office furniture to heavy-duty jobs of 1500 pounds capacity.

Colson also manufactures a wide range of trucks—hand trucks, platform trucks, box trucks, drum and barrel trucks and Lift-Jack Systems. Write us or consult your phone book under "Casters" or "Trucks—Industrial" for the Colson representative near you.

Write today for free 68 Page Caster Catalog

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS • LIFT JACK SYSTEMS • INDUSTRIAL TRUCKS

BREVITY—Identify by IEN - 568 if you write the maker

HERC-ALLOY SLING CHAINS

PREFERRED... because of proved advantages in use

Production Executives and Safety Directors look for many things in a sling chain—greatest strength, maximum safety, lighter weight, handling ease, resistance to wear, minimum cost against service life.

Because they found all these advantages in HERC-ALLOY by on-the-job experience, it became a matter of course to prefer and specify HERC-ALLOY Sling Chains.

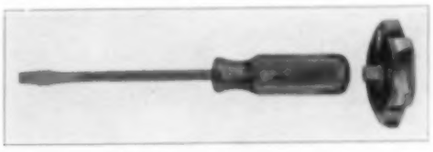
Write for illustrated Data Book No. 3 which contains helpful information on sling chain selection and use.

COLUMBUS McKINNON CHAIN CORPORATION
(Affiliated with Chisholm-Moore Hoist Corp.)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
District Offices: New York • Chicago • Cleveland
Other Factories at Angola, N. Y., Dixon, Ill., St. Catharines, Ont., Can., and Johannesburg, South Africa

BREVITY—Identify by IEN - 570 if you write the maker

SCREW DRIVING . . Hand tool with separate aluminum ratchet head

Source: KIPTON INDUSTRIES INC.
14-18 W. Main St., Dept. ED, Norwalk, Ohio



Ratchet head multiplies leverage

Palm-Grip trade names a new line of screw drivers available in regular, Phillips and Clutch-Head types. In each a separate aluminum wheel-type head with a three-position ratchet and square drive tongue fits into the handle end in removable arrangement. A latch on the under face of the head permits setting the ratchet for solid action or for drive in either direction.

The regular-type screw driver is available with a blade length measuring 1½ to 4 in. and blade width in an overall range from 3/16 to 5/16 inches. The Phillips-type driver has a 4½, 6 or 8-in. blade with No. 2, No. 3 and No. 4 point size respectively. The Clutch-Head design is in four lengths between 3½ and 5 in. with clutch sizes at 5/32 to 7/16 inch.

BREVITY—Identify by IEN - 571 if you write the maker

MOTOR CONTROL . . Manual starter mounts indicating light on housing

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

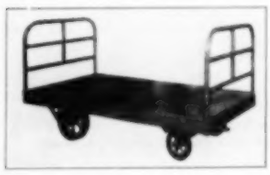
Class 1-100-51 and 10-100-50A

The company announces availability of its Motor Watchman manual motor starter in NEMA Sizes 0 and 1 in Type-1 enclosures with an indicating light in the hinged cover. This light can be wired to show whether the starter is "on" or "off." It is available for ac circuits from 110 to 600 volts.

BREVITY—Identify by IEN - 572 if you write the maker

TRUCK . . Hand platform unit rates 1½ ton, length is 69 in.

Source: MARKET FORGE CO.
23-27 Garvey St., Everett 49, Mass.



Steel construction with rounded corners and edges features this new platform truck. It is intended for use alone or as a trailer in a train. Loops are provided on each side for diagonal-type coupler rods that permit backing with a tractor as well as movement in forward direction. Tubular end frames are in removable assemble at the two ends. Width measures 36 inches. Height over the end frames is 23 in. and from floor to deck is 14 inches. Cushion rubber tires are standard equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 573 if you write the maker

BALL BUSHING

The BALL BEARING for your **LINEAR MOTIONS**

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A BALL BUSHINGS.

And now hundreds of original equipment manufacturers use the low cost Commercial Series B BALL BUSHINGS which were developed for support of linear motions in competitively priced, volume manufactured products where super precision is not essential.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push pull actions, or in support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and engineering with BALL BUSHINGS!

LOW FRICTION • LONG LIFE
ELIMINATES BINDING and CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LASTING ALIGNMENT • LOW MAINTENANCE

New manufactured for ¼", ⅜", ½", ¾", 1" and 1½" *shaft diameters.*

Write for descriptive literature and the name of our representative in your city.

THOMSON INDUSTRIES, INC.
MANHASSET, NEW YORK

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

BREVITY—Identify by IEN - 574 if you write the maker

FOR HIGH-SPEED INDUSTRIAL-SOLDERING

Use G-E Calrod® Soldering Irons

HERE'S WHY THEY ARE PREFERRED BY . . .

PRODUCTION MEN . . . because they are built tough for long, continuous production line soldering. With calorized or ironclad tips, they stay clean, solder fast and can be easily disassembled.

MANAGEMENT MEN . . . G-E irons last longer and need less service. Exhaustive tests in some of the world's largest soldering iron users show that G-E irons save them money.

MAINTENANCE MEN . . . because superior features, like the cord-strain insulator which withstands a pull of 35 pounds, makes far less maintenance necessary. When it's occasionally necessary, the dependable G-E cartridge heater slips right out for servicing—just pull a pin.

FOR FREE BULLETIN, GEA-1519, ask your nearby G-E distributor, or write to: Sect. 720-66, General Electric Co., Schenectady, New York.

®Registered Trademark

GENERAL ELECTRIC

BREVITY—Identify by IEN - 575 if you write the maker

MILLERS FALLS TOOLS

The Mark of Superiority

Millers Falls Metal-Cutting Bands give you all these advantages

1. Special formula steels and unique, precision heat-treating processes combine to produce extreme tooth hardness without sacrificing toughness. That's why Millers Falls band saws are cutting more for less in thousands of plants.
2. Millers Falls offers you a complete line — the right blade for every type of job and every material.
3. Millers Falls bands are available cut and pre-welded to fit any machine — or, if you prefer, they may be stacked in coils of 100 ft. and up.
4. Millers Falls bands are packed in separate cartons, clearly marked for easy identification and storage.

Write for full details, or let us arrange a convincing demonstration.

Millers Falls Company — **Dept. P Greenfield Mass.**

BREVITY—Identify by IEN - 576 if you write the maker

NEW! DODGE SLIDE-SET VISE

Cut away view

SLIDES IN "NEUTRAL"!
INSTANT ACTION!
GRIPS CONVENTIONALLY!
FULL POWER!

● Entirely new in principle, with patented fast slide action that speeds work, reduces operator fatigue, saves wear on parts. All the power of a heavy conventional vise (weighs 58 pounds). Jaw slides in "neutral" before you lock it by turning handle in conventional way. No tedious "spinning" in and out. No-Pinch handle protects against blood blisters. Every Dodge Slide-Set pays dividends in greater efficiency and production. *Write now for free Bulletin.*

Dodge Manufacturing Corporation, 600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

BREVITY—Identify by IEN - 577 if you write the maker

FAFNIR Ball Bearing
Power Transmission Units

THE FAFNIR BEARING COMPANY
NEW BRITAIN, CONN.

FAFNIR BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

BREVITY—Identify by IEN - 578 if you write the maker

LIFTING THE CLUTCH OUT OF POSITION

AT YOUR SERVICE

At the other end of your telephone is CLARK'S worldwide Service Organization ready to give you every needed help where you need it—when you need it. You'll find the Service Organization nearest you listed in your Classified Telephone Book under "Trucks, Industrial."

Fill in the coupon, attach it to your letterhead and mail it

THE CLUTCH is far and away the most vulnerable part of a fork-lift truck. It takes the brutal strain, torture and wear each day of hundreds of stops, starts, "inching" maneuvers, shifts from forward to reverse and vice versa. In just one week of work it takes more punishment than your car's clutch takes in a year.

CLARK Engineering has produced a better clutch—a clutch that stands up longer under severe use than any other we know of in the fork-truck field. Yet even these superior clutches reach the point where replacement is an unavoidable necessity.

But here, too, CLARK Engineering has demonstrated its superiority by producing:

★ a truck design which is unrivalled for simplicity, speed and economy in the removal and replacement of a worn clutch . . . a design in which clutch-replacement requires a mere 80 minutes . . . less than an hour and a half!

This QUICK-CHANGE CLUTCH is just one of MANY good and important reasons why it pays to standardize on CLARK equipment for handling materials.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 49, MICHIGAN
☐ PLEASE HAVE REPRESENTATIVE CALL
Please send: ☐ CLUTCH DATA SHEETS ☐ MATERIAL HANDLING NEWS
Name
Firm Name
Address
City Zone State

BREVITY—Identify by IEN - 580 if you write the maker

ELECTRIC DUCT . . Joint connector makes adjustable assembly between ends

Source: SQUARE D CO.
6058-62 Rivard St., Detroit 11, Mich.

Mechanically strong and well insulated

New design of connector for the company's Feed-in electric duct eliminates need to match right and left-hand duct ends in making an installation. The factory-installed joint bolts face outward for accessibility so only tie plates and nuts are required to complete the job. These can be set with one hand, leaving the other for an operator to support himself. The duct is available in ratings of 600 to 4,000 amperes.

BREVITY—Identify by IEN - 581 if you write the maker

SANDING . . Portable pneumatic tool produces vibration free reciprocation

Source: DETROIT SURFACING MACHINE CO.
1328 E. 8 Mile Road, Detroit 20, Mich.

To sand, rub, polish

Model AF is a new air-operated portable sander which the company has added to its electric-tool line, previously described IEN-12337-49. The new unit provides the same vibration-free reciprocating action that features the electric drive. It is designed for operating pressure at about 70 pounds. Weight is about 6 pounds.

Abrasive paper cut to 3⅔ by 9 in., or just ⅓ of a standard 9 by 11-in. sheet, fits the sanding head. It is designed to quickly release a worn sheet and take a new one in any abrasive grit to No. 40 with paper or cloth backing. The grip and palm-operated valve permits one-hand operation. A knob at the front assists in manipulating the tool on overhead work and other positions that are not normal.

BREVITY—Identify by IEN - 582 if you write the maker

MACHINING . . Sound motion picture on making of automotive parts in special machines

Greenlee Bros. & Co.
1703 Herbert Ave., Rockford, Ill.

Production of two types of automotive transmission parts is shown by new "Special Machinery" film. Progress through stations of five larger transfer machines is followed with special emphasis on fixtures that tilt, rotate and tip the work. Showing time is 18 min. for the 16-mm. film.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 583 if you write the maker

TAC does what no other tool can do!

AT LAST! AN OPEN-END RATCHET WRENCH — the world's first true universal wrench. A patented design for connections on tubing, rods, piping, conduit, studs, etc. Sixty-four socket sizes from ⅜" to 4". Smallest effective ratcheting arc yet — 5° to 7½°. TAC will also do every job any ordinary ratchet wrench will do: one TAC set replaces literally dozens of single-purpose hand tools.

makers of advanced tools for industry

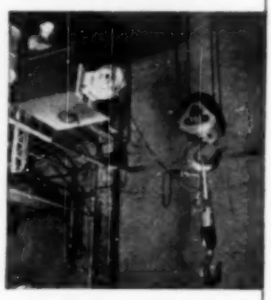
TAC

TUBING APPLIANCE CO.
7112 South Victoria • 10321 Alameda • Los Angeles, Calif.

BREVITY—Identify by IEN - 584 if you write the maker

The New Ametron Electronic Scale weighs by electronics

- ELECTRIC LOAD CELLS
- REMOTE INDICATION
- PRINTING RECORDERS
- LOW MAINTENANCE



Picture shows 10,000 pounds capacity crane electronic scale used in shipping department of Harnischfeger Corporation, West Allis, Wisconsin.

Write for illustrated circular "The Way to Weigh"

STREETER-AMET COMPANY
4101 RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS

BREVITY—Identify by IEN - 585 if you write the maker

CYCLOTHERM STEAM GENERATORS

Factories, Public Buildings, Institutions all over America are finding out what the U. S. Navy discovered during the last war: CYCLOTHERM'S Cyclonic Combustion Steam Generators do a BETTER job, quicker and cheaper.

Proof of this statement and why it is true may be had by writing the Cyclotherm Corporation directly or check your phone book for your local Cyclotherm office.

Boilers designed for oil or gas. From 18 thru 500 h.p., 15 to 200 lbs. operating pressure.

For further information, write Dept. J

CYCLOTHERM CORP., OSWEGO, N. Y.

▼ BREVITY—Identify by IEN - 587 if you write the maker ▲▼

COSMOLINE COATED GUN COMPLETELY DEGREASED

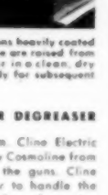
IN LESS THAN 4 MINUTES

Four 20mm. guns heavily coated with Cosmoline are raised from the degreaser in a clean, dry condition, ready for subsequent operations.

WITH A PHILLIPS *Electric* VAPOR DEGREASER

HERE was a really tough metal cleaning problem. Cline Electric Manufacturing Company, Chicago, had to remove Cosmoline from 20mm. guns before modification operations on the guns. Cline purchased a Phillips electric batch-type degreaser to handle the job. As a result sixteen guns are being degreased per hour at a savings of 85% on cleaning costs per gun.

Here is another instance of how Phillips degreasers cut costs through faster, more thorough, more economical metal cleaning. For the answer to your degreasing problems, check with Phillips.



SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN

Phillips MANUFACTURING COMPANY
3461 Touhy Avenue • Chicago 45, Illinois
Engineered Metal Cleaning Equipment

▼ BREVITY—Identify by IEN - 588 if you write the maker ▲▼

NEW! FREQUENCY AND TIME MEASUREMENTS ACCURATELY... CONVENIENTLY

using $f\frac{n}{t}$

ANY FACTOR MAY BE MEASURED FOR FIXED VALUE OF THE OTHER

Model 801 Universal 6-in-One MEGACYCLE FREQUENCY-TIME COUNTER by *Potter*

Now, the Potter Instrument Company offers all in one equipment, the features heretofore available only in separate counting systems. Two complete counting channels, a 100 kc crystal oscillator time base and unique gating circuits are combined to provide the new FREQUENCY-TIME COUNTER.

FREQUENCY MEASUREMENTS	0 to 1 mc range by counting cycles per pre-selected time or by measuring time per pre-selected count. Accuracy 0.001% minimum.
TIME INTERVAL MEASUREMENTS	0 to 10 seconds ± 10 micro-seconds.
FREQUENCY RATIO MEASUREMENTS	Ratio of two external frequencies can be measured.
SECONDARY FREQUENCY STANDARD	100 kc crystal oscillator with divided frequencies available at 10, 1 kc and 100, 10, 1 cps.
TOTALIZING COUNTER	Six decades, pulses 0 to 1 mc, sine wave 10 cps to 1 mc.
DIRECT RPM READING TACHOMETER	Through the use of an external 60 count per revolution photoelectric disc generator an accuracy of ± 1 rpm is obtained.

Please address inquiries to Dept. 7-X

POTTER INSTRUMENT COMPANY • INC.
115 CUTTER MILL RD., GREAT NECK, N. Y.

▼ BREVITY—Identify by IEN - 590 if you write the maker ▲▼

MOTOR . . Synchronous timing unit for 400 cycle ac. operating circuits

Source: HAYDON MFG. CO.
2102 Forest St., Torrington, Conn.

No radio interference

The rotor speed for this new 400-cycle 110-volt ac. motor is 3,000 rpm. Power available at the motor shaft is 0.025 inch ounces. Standard gear trains are available for a range of speed between 1/60 and 30 rpm. The motor is interchangeable with the company's standard 60-cycle timing unit. Overall dimensions are about 2 in. in diameter, 1⅝ in. from front to back not counting the shaft extension, 2⅛ in. in height.

Variations in temperature, supply voltage, load within the operating limits of the motor do not affect its timed operation. Radio frequency filtering or shielding is not required. In addition to the standard basic units, the company is prepared to supply special assemblies for timing application as specified.

▼ BREVITY—Identify by IEN - 591 if you write the maker ▲▼

PLASTIC . . Liquid resins for casting, impregnating, potting uses

Source: CIBA CO.
P. O. Box 25-A, Village Station, New York 14, N. Y.

Technical data upon request

Three new resins have been added to the company's Type-CN Araldite line under the designations of D, F and G. They cover a range of applications, particularly in connection with the manufacture of electrical apparatus, in casting, impregnating and potting. Each is mixed with a catalyst hardener just prior to use and is cured after casting in a range between 100 and 200 deg. C. depending upon application.

▼ BREVITY—Identify by IEN - 592 if you write the maker ▲▼

THERMOMETER . . Dial type unit for surface temperature to 300 deg. F.

Source: PACIFIC TRANSDUCER CO.
11919-23 W. Pico Blvd., Los Angeles 64, Calif.

About $5

Coil-type bi-metal element in this new Model-310 thermometer moves a pointer over a dial reading from zero to 300 deg. F. The element is assembled beneath a reflecting mirror on the dial. The mirror protects it against external radiation to read only the temperature of the surface on which the unit is placed.

Mounting is by a small amount of silicone grease or a magnetic clamp, both of which are supplied. Application can be made on flat or curved surfaces. Overall diameter is 2 inches. Weight of the new thermometer is 1 ounce.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

▼ BREVITY—Identify by IEN - 593 if you write the maker ▲▼

▼ BREVITY—Identify by IEN - 594 if you write the maker ▲▼

It's B&W ALLMUL *the newest way to cut refractory costs!*

B&W Allmul Firebrick takes tough furnace applications in stride. In fact, this new low-priced, electric-fused mullite firebrick creates a new standard of refractory economy by its low first cost and by eliminating the frequent need for furnace relining. Allmul has high hot load strength, high resistance to spalling, good volume stability and a high melting point. Want to know more about this economical fused-mullite refractory? Send for B&W Bulletin R-29.

THE BABCOCK & WILCOX CO.
Refractories Division
85 LIBERTY ST., NEW YORK 6, N. Y.
WORKS: AUGUSTA, GEORGIA

▼ BREVITY—Identify by IEN - 595 if you write the maker ▲▼

Delpark COOLANT FILTERS

FOR GREATER GRINDING EFFICIENCY

Grinding problems can be minimized and production increased with Delpark Full-Flowing, Self Cleaning Coolant Filters. Complete and continuous filtration of soluble oils and cutting oils removes heat-bearing solids as coolant comes from the work. Assures more uniform limits, better finish, and greater accuracy with a clean wheel and lower coolant temperature. Fully automatic, no down time for cleaning reservoir, extends coolant life. Two to several hundred gallons per minute capacities.

- Less wheel dressing
- Longer wheel life
- Uniform coolant temperature
- Lowers rejections
- More accurate gauging

Delpark
INDUSTRIAL FILTRATION
Backed by 30 Years Experience in Industrial Filtration

Write for more complete information

INDUSTRIAL FILTRATION COMPANY
5110 Industrial Avenue • Lebanon, Indiana

▼ BREVITY—Identify by IEN - 596 if you write the maker ▲▼

If you want REAL smoothness greater load capacity, greater compactness or lighter weight in your drive, we suggest you look into Cone-Drive DOUBLE-enveloping gears and reducers—the gears with MORE TEETH IN CONTACT and MORE CONTACT PER TOOTH

CONE-DRIVE GEARS
Division Michigan Tool Company
7171 E. Nevada Road • Detroit 13, Michigan

Ask for Bulletin "789-50"

▼ BREVITY—Identify by IEN - 597 if you write the maker ▼

OTC

REPLACE 29 SIZES WITH THESE TWO

NEW GIANT ALLOY adjustable wrenches

THINNER-LIGHTER-STRONGER

Until now 29 wrenches have been needed to handle the jobs done by these two new alloy adjustable wrenches. They are THIN—to get at the work easily. Strong—designed for added strength at leverage points. Light—to make job servicing easy. Economical—saves time, tools and materials. Large jobs become simple ones.

Giant alloy wrench No. OA-24 is 24" long, ⅝" thick, weighs only 10 lbs. and adjusts to 14 standard sizes from 1⅛" to 2⅞". OA-16 is 15" long, ½" thick, weighs only 22 lbs. and adjusts to 16 standard sizes from 2 15/16" to 4½".

ANOTHER EXAMPLE OF ENGINEERING THAT MAKES OTC TOOLS OUTSTANDING

OWATONNA TOOL CO.
371 CEDAR ST., OWATONNA, MINNESOTA

▼ BREVITY—Identify by IEN - 598 if you write the maker ▼

Abart Speed Reducers are precision built to give you years of maintenance-free service, even under severe operating conditions. There are 75 models in the complete line of Abart Speed Reducers...one of which will meet your exact requirement for each specific application. Ratings from 1/50 to 168 h.p. and ratios up to 10,000 to 1. Abart Speed Reducers are compact, oil-tight and sealed against dust. For heavy-duty, precision speed reducers, specify Abart.

SEND FOR COMPLETE CATALOG
It will aid you in selecting the Abart Speed Reducer which is exactly suited to your need.

Abart GEAR & MACHINE CO.
4833 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers

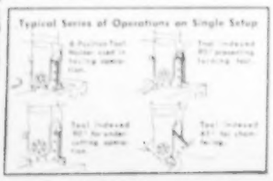
▼ BREVITY—Identify by IEN - 599 if you write the maker ▼

ANNOUNCING A NEW 8 POSITION TOOL HOLDER

FOR VERTICAL BORING AND TURNING MILLS

One Simple Wrench Adjustment to Change Position
Indexes Accurately Through 360° in Increments of 45°

You'll save setup time and increase production. Do-Ton will present equipped with the new Davis 8 Position Tool Holder.



Typical setup on a large vertical boring mill, showing use of eight tools.

DAVIS BORING TOOL
Div. of Giddings & Lewis Machine Tool Company, Fond du Lac, Wis.
World's Largest Builder of Horizontal Boring, Drilling and Milling Machines • Planer Type Milling Machines • Large Vertical Boring Mills

▼ BREVITY—Identify by IEN - 600 if you write the maker ▼

HEATING . . Electric oven operates on 110 volt ac. to 325 deg. F.

Source: GRIEVE-HENDRY CO.
1103 N. Paulina St., Chicago 22, Ill.

To heat, dry, bake

Model TD is a new assembly in the company's line of portable electric ovens. It is characterized by its eight pull-out drawers for materials to be heated. Magnesium strip elements provide the heat. A motor-driven fan maintains interior circulation in connection with an adjustable damper and exhaust ports for stale air from the oven interior.

The drawers measure 11½ by 23 by 2 inches. Outside dimensions over the housing are 30 by 25 by 24 inches. The unit can be provided with a thermometer, an interval timer, a red pilot light to show when the heating elements are on, and an exhaust-chamber adapter to vent fumes.

▼ BREVITY—Identify by IEN - 601 if you write the maker ▼

SEALING . . Plastic material closes openings to pour babbit bearings

Source: ARMSTRONG CO.
239-43 S. Post St., Detroit 17, Mich.

Ten pounds $2.50

Dambabbit is a new plastic material packaged in 10-lb. containers. It is taken from the container in the required amount and rolled out like dough or putty. The rolled piece is wrapped around a shaft at the ends of a bearing into which babbit is to be poured. A piece can be used also to make a good pour inlet into a bearing box. The material is removed and returned to the container, to be used again, as soon as the babbit has solidified.

No water is contained in the material so it cannot form steam to spatter the babbit. It does not dry out in use and remains serviceable for many applications.

▼ BREVITY—Identify by IEN - 602 if you write the maker ▼

MANAGEMENT . . Materials for defense production the subject of new AMA booklet in its Production Series

American Management Association
330 W. 42nd St., New York 18, N. Y.

Publication 198 is a new 60-page booklet, list price $1.25, which describes the Government's conservation program, conservation and substitute materials, pattern of our national production, the Controlled Materials Plan, effect of Government controls on procurement, and the York Plan of industrial mobilization. Also reported is information on meeting the armed services quality requirements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 603 if you write the maker ▼

The Portable MORSE ROTATOR

THE NEWEST ADDITION TO 25 YEARS OF SUCCESSFUL MANUFACTURING EXPERIENCE

MODEL 500

SAVES TIME! SAVES LABOR!
SAFELY ROTATES UP TO 500 LBS. AT 10, 20 OR 40 RPM

A powerful, compact motorized unit that will cut costs of mixing, tumbling, cleaning, etc! Scientifically engineered for smooth, safe revolving. Can be loaded by ONE MAN and is easily moved. The power drive has a ¼" dia. shaft and is equipped with self-aligning bearings. Four 4" dia. Neoprene drive wheels adjustable to take from 1 to 55 gal. cylindrical containers. Wt. before crating 137 lbs. Furnished with motor and gear reduction unit. *Write For Complete Information.*

MORSE MANUFACTURING CO. INC.
133 Dickerson Street • Syracuse 2, N. Y.

▼ BREVITY—Identify by IEN - 604 if you write the maker ▼

Save Time, Labor, Dollars!

TEST • STUDY • CONTROL VISCOSITY

As Simply, Quickly and Easily as Taking Temperature Readings

Just a flick of a switch, then read the Brookfield dial, and you have your viscosity determination in centipoises. The whole operation, including cleaning up, usually takes *less than a minute.*

Available in a variety of models suitable for extremely accurate work with both Newtonian and non-Newtonian materials, Brookfield Viscometers are portable and plug in any A.C. outlet — *can be used in Lab, Plant or both.*

Write today for fully illustrated catalog showing Brookfield Viscometers adaptable to any viscosity problem *from less than one to 32,000,000 centipoises.*

BROOKFIELD COUNTER-ROTATING MIXER — Two concentric, oppositely rotating shafts, propeller equipped and driven by two motors, produce an annular flow and up to 48,000 scissor-like cuts/minute. Enable exceptionally fast, effective and efficient laboratory mixing. Not a "stirrer." Write for Brookfield MIXER brochure.

Brookfield ENGINEERING LABORATORIES, INC.
290 Porter St., Stoughton, Mass.

▼ BREVITY—Identify by IEN - 605 if you write the maker ▼

No Special Wiring...

WITH

IBM

ELECTRONIC TIME CONTROL

ELECTRONIC—no special clock or signal wiring. Time systems operate and are supervised by electronics over regular AC circuits.

ECONOMICAL—low installation cost. Time units can be relocated without special clock or signal wiring.

EFFICIENT—automatic coordination of clocks, recorders, and signals to the second. Uniform time is assured in all units.

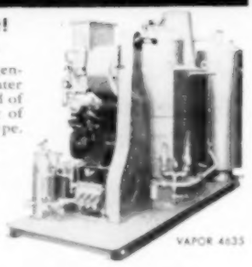
Write for information today
INTERNATIONAL BUSINESS MACHINES CORPORATION
590 Madison Avenue, New York 22, N. Y.

▼ BREVITY—Identify by IEN - 606 if you write the maker ▼

Instant Steam—VAPOR-CLARKSON STEAM GENERATORS

Where you want it! When you need it!

This packaged steam generator delivers a greater steam output per pound of weight and cubic foot of space than any other type. Full pressure in less than 2 minutes from a cold start. Automatic controls in cabinet modulates from ⅓ to full capacity, generating steam only when needed. Write for Bulletin No. 525.



VAPOR 4635

Also HOT WATER HEATERS for All purposes

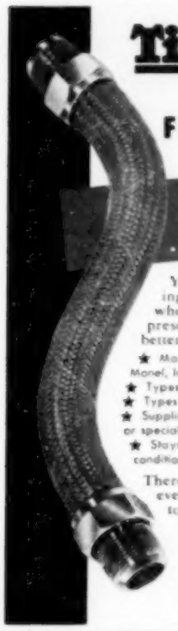
VAPOR 4915

The Vapor 4915 Hot Water Heater with standard safety controls is built in one small compact unit.

• Uses only 1.65 gal. of fuel oil per hour at maximum output • Size 34" long, 19½" wide, 26" high • Push button starting • Maintains desired temperatures • Simple electric and water connections • Requires no attendant • Weighs only 225 lbs.

VAPOR HEATING CORPORATION
80 E. JACKSON BLVD. • CHICAGO 4, ILLINOIS

▼ BREVITY—Identify by IEN - 607 if you write the maker ▼



Titeflex

ALL-METAL FLEXIBLE TUBING

...FOR VIBRATION
...FOR FLEXING
...FOR MISALIGNMENT

You can't beat Titeflex for conveying liquids, gases or semi-solids when there is any kind of motion present. Here are the facts about this better-built flexible tubing:

★ Made in five metals—brass, bronze, stainless, Monel, Inconel.
★ Types and sizes to withstand heat to 1550°F.
★ Types and sizes for pressures up to 6800 psi.
★ Supplied with any type of fittings—standard or special.
★ Stays flexible and stays tight under severe conditions.

There's a style of Titeflex for almost every need—and Titeflex is *all-metal*, to last longer in any kind of service.

Write for complete catalog.

Titeflex, Inc.
506 FRELINGHUYSEN AVENUE
NEWARK 5, N. J.

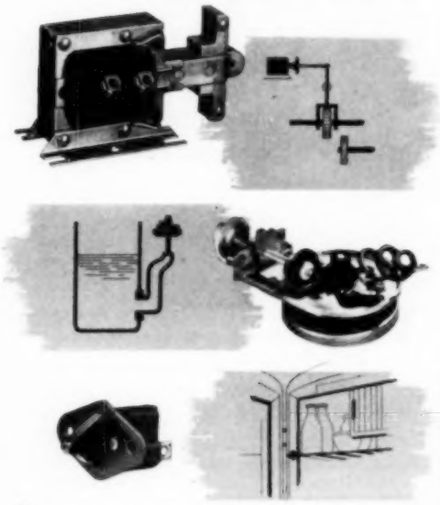
▼ BREVITY—Identify by IEN - 608 if you write the maker ▼

Custom-Engineered-Custom-Made

to your application

SORENG ELECTRICAL SPECIALTIES

Production-engineered to assure top quality at low cost



Custom-made components at production-line prices. Isn't that what *you* want? Then look to Soreng for quality electrical specialties—for both defense and civilian production.

Soreng Solenoids, Switches, Terminals and other components are expertly engineered and manufactured to *your specific* application. That means they do a *better* job throughout a *longer* service life. Strict quality control and mass production are your assurance of *dependable* components at *competitive* prices.

So why not see for yourself what Soreng can do for *you*—on both your regular and defense work. Your inquiry will receive prompt attention—without obligation. Please address Dept. A21.

Specialists In Electrical Specialties SM

SORENG MANUFACTURING CORPORATION
9555 Eden Ave., Schiller Park, Ill. (Chicago Suburb)
Plants: Schiller Park, Ill. • Fremont, Ohio

▼ BREVITY—Identify by IEN - 610 if you write the maker ▼

PLANING . . Production machine to handle a variety of small work

Source: GIDDINGS & LEWIS MACHINE TOOL CO.
140-44 Doty St., Fond du Lac, Wis.

No special foundation

Chipmaster trademarks new line of planing machines in 24, 30 and 36 in. sizes with table lengths starting at 6 feet. It is available at present in open-side design. Table width is 24, 28 and 32 inches. Actual capacity under the rail is 25, 31 and 37 in. in height, with maximum width capacity at 31, 41 and 41 inches. Bed length for a 6-ft. table is 15 ft. so the table will not overhang at either end of the stroke. The machine mounts three tool heads, two on the crossrail and one on the collet.

Drive is by a reversing motor geared to a forged-steel rack centrally located under the table which slides in Vee ways on the bed. The table Vees are faced with non-metallic material so the ways cannot be scored.

Independent feed is provided for each of the heads employing the company's air-hydraulic mechanism for stepless adjustment between 0.010 and 0.500 in. at the saddles and one-half that range at the slide. Rapid traverse by electrical drive is 6 feet per minute. Slide down-feed is maximum at 12 inches. It measures 9 in. below the rail. Infeed for the side head is 10¾ in. maximum and 7⅝ in. inside the column. Vertical travel of the side head is to 19¼, 25¼, and 31¼ in. above the table in the three machine sizes.

Air lifters are assembled on each head to hold the tool from the work on the return stroke. The tool is dropped in a cushioning action prior to start of the cutting stroke. Forced-feed lubrication is provided for the bed ways and the gearing.

▼ BREVITY—Identify by IEN - 611 if you write the maker ▼

PUMP . . Centrifugal sump unit with sealed diaphragm actuated motor

Source: KENCO INC.
1123-27 N. Ridge Road, Lorain, Ohio

List is about $96

Bronze housing encloses a sealed ball-bearing motor, impeller and diaphragm-actuated line switch in this new Type P-109M design of the company's centrifugal sump pump, previously described IEN-5872-49. The pump operates submerged in a sump. It is controlled by rising and falling water level which increases or decreases air pressure on the diaphragm to close and open the motor circuit. Connection is made to a 110-volt ac power source by means of a cord and switch. The latter can be set to an automatic position for continuing operation or to a manual position for control by an operator.

Rating is 55 gpm. on free delivery. Overall dimensions are 13 by 19½ inches. Motor rating is ⅓ hp. and weight is 50 pounds. The pump will discharge liquid to within ⅝ in. of the bottom.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

▼ BREVITY—Identify by IEN - 612 if you write the maker ▼

DON'T GUESS! TEST R.P.M.

AND F.P.M. IN YOUR PLANT

They are the keys to production. Avoid loss of production due to slow speeds and feeds, or excessive wear because of abnormal high speeds by checking them with STICHT portable or permanently mounted Tachometers.

STICHT UNIVERSAL HAND TACHOMETERS

Centrifugal type, combine five ranges in one instrument such as No. 303: 30-12,000 RPM, No. 322: 60-24,000 RPM, No. 346: 120-48,000 RPM. Many others, Bulletin No. 1046.

HERMAN H. STICHT CO., INC.
Tachometer Headquarters
27 PARK PLACE NEW YORK 7, N. Y.

▼ BREVITY—Identify by IEN - 613 if you write the maker ▼

● If your present product development plans involve the accurate control of temperatures or pressures, bring your problems to Fulton Sylphon engineers.

We specialize in designing and developing bellows assemblies and devices to meet specific needs . . . in practically all industries.

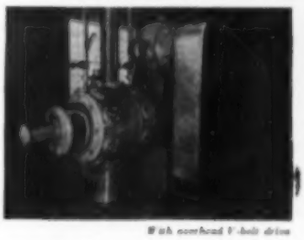
44 years' experience. Complete engineering service and production facilities. Catalog AN-1200 gives complete information.

FULTON SYLPHON Div.
FIRST WITH BELLOWS

THE ROBERTSHAW-FULTON CONTROLS CO. • KNOXVILLE 4, TENN.
Canadian Representative, Darling Brothers, Montreal

▼ BREVITY—Identify by IEN - 614 if you write the maker ▼

AIR FREE FROM OIL



With overhead V-belt drive

Since no oil, grease or other cylinder lubricant is required in CP OIL-LESS CYLINDER COMPRESSORS, they are ideal where it is essential that compressed air be absolutely free from oil to avoid injury to products. Available in a wide range of sizes and ratings; in single and two-stage types; arranged for belt, motor or steam drive. Write for Bulletin 728-8.

CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 40th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

▼ BREVITY—Identify by IEN - 615 if you write the maker ▼

this WALL CHART can SAVE MONEY for you!

Here's a brand new wall chart guide to selecting hardfacing rods that can help you beat the high cost of wear! Lists over 50 common hardfacing applications . . . recommends the rod to use . . . shows the available sizes and preferred method of application.

If you have a problem of wear caused by impact, abrasion, heat or corrosion, AMSCOATING with Amsco Hardfacing Products can save money for you . . . and this new wall chart tells you where and how!

Write for your free wall chart today!

American Brake Shoe Company
AMERICAN MANGANESE STEEL DIVISION
415 EAST 140th STREET • CHICAGO HEIGHTS, ILL.

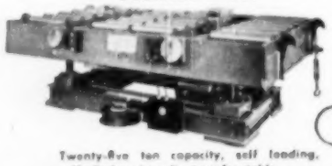
BREVITY—identify by IEN - 616 if you write the maker

Power positioning of material increases production in sheet feeding operation.

perhaps
YOUR PRODUCTION CAN BE INCREASED THROUGH POWER POSITIONING OF TOOLS AND MATERIALS

PORTELVATOR®
has supplied the answer to others.

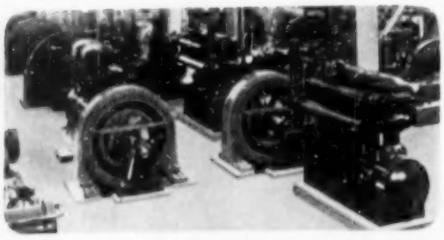
Start a beneficent chain reaction now; write for
BULLETIN P-507



Twenty-five ton capacity, self loading, self discharging die transfer table.

THE Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

BREVITY—identify by IEN - 617 if you write the maker



Celanese Corp. Uses 6420 Horsepower of Frick Refrigeration

Fourteen Frick refrigerating machines are in operation at the Amcelle plant of Celanese Corporation of America, near Cumberland, Md., makers of chemical yarns. Most of these ammonia compressors have been in use since 1929. The motors driving the new vertical machines, shown in the foreground, are each of 1250 hp.

This is a large-scale example of the dependability and economy of Frick ammonia refrigeration. Power requirements, when operating in summer weather on air conditioning loads, are only 0.70 hp. per ton of refrigeration.

DEPENDABLE REFRIGERATION SINCE 1883
FRICK CO.
WAYNESBORO, PENNA. U.S.A.
Also Builders of Power Farming and Sawmill Machinery

BREVITY—identify by IEN - 618 if you write the maker

Photo shows plate glass pushed against resilient air-inflated wheel. Note large abrasive contact area—up to 3000% more! This means a corresponding production increase.

. . . how to INCREASE BUFFING, POLISHING PRODUCTION 3000%

● You can boost your buffing and polishing output up to 3000% on flat work . . . and 600 to 700% on contours . . . by using this resilient air-inflated wheel. Many other advantages such as—*no chatter or bounce . . . eliminates under-cuts . . . produces a straight pattern similar to a hand finish.* For use on portable tools or bench-stands—wherever ordinary polishing wheels are used. Send NOW for free literature and name of distributor nearest you. Nu-Matic Grinders, Inc., 8221 Carnegie Ave., Cleveland 3, Ohio.

send for full information TODAY!

NU-MATIC Air-Inflated GRINDERS

BREVITY—identify by IEN - 619 if you write the maker

DUST COLLECTING . . Filter panel employs viscous coated wire mesh

Source: AIR FILTER CORP.
112 N. Water St., Milwaukee 2, Wis.

Airsam Vire-Crimp Type-W

Corrugated strips of galvanized wire mesh are assembled in off-center arrangement so there is no direct passage for air through this new dust-collecting panel. Edges of the strip are smooth for safe handling. The air flows into divider channels where it is baffled by a filter wall. Rating is at 300 to 500 fpm. for efficient velocity.

The wire mesh is assembled in a galvanized-steel frame with brazed corners and joints. Reinforcing rods through the mesh provide good rigidity. The assembled frame can be washed and recharged for continuing service.

Four sizes range from 16 by 20 in. to 20 by 25 inches. Each is 2 in. in thickness. The smallest unit rates 900 cfm. at 500 fpm. The largest will handle 1,500 cfm. under the same conditions. Weight ranges from 9¼ to 13½ pounds.

BREVITY—identify by IEN - 620 if you write the maker

TRUCK . . Power lift platform unit, motor driven, has load rating to 20 ton

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 3, Ohio

General utility heavy load carrier

The load platform of this new Model L-14 truck measures 96-in. in length by 41 in. in width. It stands 17½ in. above the floor in lowered position and is provided with 6 in. of hydraulic lift movement. The truck is mounted on two drive wheels at the rear with 22 by 10-in. tires and on 6 trailing wheels beneath the platform with 15 by 10-in. tires. An engine-driven generator or a storage battery can be employed as the power source. Overall length is 193 inches. Width measures 56½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
See the product index inside the back cover

BREVITY—identify by IEN - 621 if you write the maker

Quality and Performance are not "CRITICAL COMMODITIES" When You Choose PREP PRODUCTS!

Prep-n-Cote
A PHOSPHATE COATING PRODUCT FOR MECHANICAL CLEANING SYSTEMS
Complete information contained in Prep-n-Cote Bulletin 48-91.

Metalprep
WIPE-OFF TYPE; DIP TYPE; AND RUST REMOVING GRADE—ALL AVAILABLE FOR STEEL
Complete information contained in Metalprep Bulletins 45-34 & 50-37.

Galvaprep
FOR GALVANIZED IRON, GALVANNEAL AND OTHER ZINC-COATED SURFACES
Complete information contained in Galvaprep Bulletin 48-89.

Alumiprep
FOR ALUMINUM ALLOY SURFACES—WIPE-OFF AND DIP GRADES
Complete information contained in Alumiprep Bulletin 48-60.

Send General PREP Bulletin 48-82

NEILSON CHEMICAL COMPANY
2683 Tecumseh Rd. Windsor, Ont. 6994 DENSON ST., DETROIT 7, MICH. 3611 Union Pacific Ave. Los Angeles 33, Calif.

BREVITY—identify by IEN - 622 if you write the maker

Backstand Method Saves Time!

Toledo Steel Tube Co. saves 2 hours per operator per day in finishing department

They point out these advantages of the backstand belt method over the set-up wheel method:

1 Time is not lost in making set-up wheels. Formerly the operators were given 2 hours a day for making their set-up wheels.

2 One backstand belt will outlast 4 to 5 set-up wheels for this application.

3 Belts maintain a flat surface for the grinding and polishing operation, whereas set-up wheels became rounded and needed dressing from time to time.

4 The uniform grit on the belts gives a better finish than did the rolled-on grit of the set-up wheels.

If you are grinding, polishing or finishing flat or contoured surfaces, cast pieces, stamped pieces or forged pieces, write today for our free booklet, "Facts About Backstand Belt Grinding and Polishing."

We recommend buying through your industrial distributor

ARMOUR *Coated Abrasives Division*
SHEETS • ROLLS • BELTS • DISCS
Armour and Company • North Benton Road • Alliance, Ohio

BREVITY—identify by IEN - 623 if you write the maker

- Retain properties from —110° to +500° F.
- Resist weathering, moisture, oxidation, ozone
- Withstand many chemicals and lubricating oils
- Will not turn to carbon despite heat

STALWART silicone rubber parts assure dependable operation under severe service conditions. They retain their desirable physical, chemical and dielectric properties over a 600°F. temperature range.

Parts fabricated from silicone stocks are resistant to permanent compression, prolonged weathering, ozone, ultra-violet light, chlorinated hydrocarbons, lubricating oils and many chemicals. STALWART is prepared to mold, extrude, punch, lathe-cut and mandrel-build precision silicone rubber parts to meet individual, S.A.E. and A.S.T.M. specifications.

SILICONE RUBBER STOCKS

Durometer Number	Hardness Shore A Scale	Tensile Strength P.S.I. Avg.	Tensile Strength P.S.I. Min.	Elongation % Avg.	Elongation % Min.	Temperature Range Low	Temperature Range High	Compression Set % at 300° F.	Resistance Tensile Strength with Air	Color (Min. Order)
*Silastic 150	45 to 55	500	250	250	200	—75	+500	40 to 60	500	White
140	55 to 65	490	400	180	150	—75	+500	50 to 70	500	White
180	75 to 85	700	575	85	60	—80	+500	70 to 90	650	White
181	75 to 85	670	550	85	60	—80	+500	60 to 80	800	Gray
s-181	75 to 85	600	500	65	50	—110	+500	40 to 60	800	Gray
250	40 to 50	650	550	300	250	—110	+500	40 to 60	800	Orange-tan
*R.S. 9100	40 ± 5		800		400	0°	+500	60 to 75	400	1
*R.S. 9101	50 ± 5		800		350	0°	+500	60 to 75		1

Write today for Catalog No. 51SR-1.

STALWART RUBBER COMPANY
200 Northfield Road • Bedford, Ohio

BREVITY—Identify by IEN - 625 if you write the maker

Yes, in *colors* for easier assembling, stocking, identification, etc. And industry is finding the Flo-master Felt-Tip Marker ideal for *all* types of marking. Its felt tip glides over any surface—metal, plastic, wood, etc. with broad, bold lines or fine lines. Flo-master semi-opaque inks—waterproof, non-smudging, fast-drying—come in a wide range of colors.

For light colored surfaces, use Transparent Inks with "POCKET SIZE" Flo-master. For dark, hard-to-mark surfaces, use Semi-opaque Inks with the "KING SIZE" Flo-master.

Ask your supplier or write to Cushman & Denison Mfg. Co., 153 W. 23rd St., N.Y.11

BREVITY—Identify by IEN - 626 if you write the maker

EASTON

a dependable design and construction service in industrial cars

EASTON CAR & CONSTRUCTION CO.•EASTON, PA.

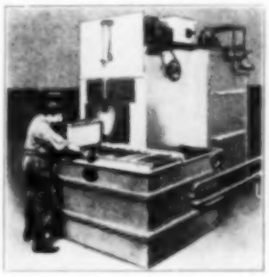
NEW YORK • PHILADELPHIA • PITTSBURGH

BREVITY—Identify by IEN - 627 if you write the maker

BREVITY—Identify by IEN - 628 if you write the maker

HEAT TREATING . . Gas fired furnace for dry gas cyaniding on work batches

Source: DOW FURNACE CO.
12043 Woodbine Ave., Detroit 28, Mich.



Work loads on tray

Model G is a new gas-fired furnace capable of heating about 500 lb. of work from room temperature to 1,500 deg. F. in an hour after the furnace has been stabilized at control temperature prior to introducing a load. Work is loaded at the front above a quench tank. It is entered through a vestibule door and moved from there into the main furnace chamber where gas-fired radiant tubes provide the heat.

A catalytic-type atmosphere generator is assembled within the radiant tubes to supply a gas that is neutral to medium carbon steel. This gas can be analyzed before entering the furnace. A motor-driven blower directs flow of atmosphere through the furnace.

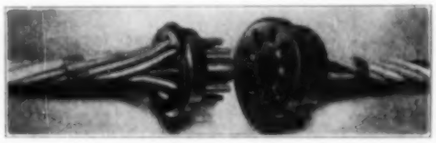
The work is brought out to the vestibule, following the required interval in the heating chamber. It is lowered into the quench tank beneath the vestibule where a motor-driven propeller draws quenching oil down through it for quick heat removal. The completed load is then removed and a new one put in its place.

Hearth area measures 2 by 2 ft. and holds a single tray consisting of a wire-mesh screen and bottomless metal work container. It can be a maximum of 12 in. in height. The screen rides on the furnace rails which are designed for a gross load of 700 pounds. The inner door to the furnace and the quench-tank elevator are each driven by a 1½-hp. brake-equipped motor and are operated by push buttons. The furnace occupies a floor space measuring about 6½ by 12 feet. Required headroom is 14 feet. No pit is required.

BREVITY—Identify by IEN - 629 if you write the maker

CONNECTOR . . Nine pin plug and socket for electronic assemblies

Source: ALDEN PRODUCTS CO.
115-19 N. Main St., Brockton 64, Mass.



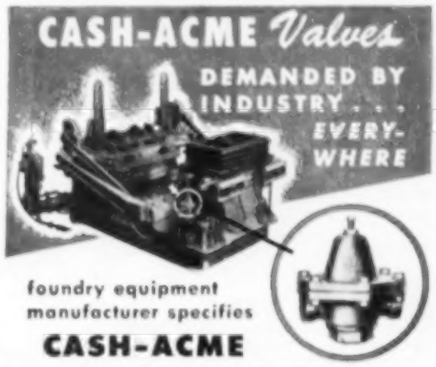
Keyed to align circuits

Type 109C to the left and Type 209FEC to the right are new mating octal-type plug and socket in a new molded-plastic connector developed by the company. Leads are attached directly to the contacts. Each lead has individual strain relief. Wire tips are crimped. Molded insulation completely surrounds each contact and lead.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 630 if you write the maker

BREVITY—Identify by IEN - 631 if you write the maker



foundry equipment manufacturer specifies

CASH-ACME

In the foundry equipment shown above, CASH-ACME Pressure Reducing and Regulating Valves withstand the rigors of constant operation found in this heavy industry. Here's actual proof of CASH-ACME superiority. During this period of possible shortages, specify automatic valves that last the life of your equipment . . . CASH-ACME. Let us tell you about the ever-growing number of cases where CASH-ACME Valves have been specified and perform successfully in dozens of industries. Write for this list of case histories and free literature describing the part CASH-ACME Automatic Valves can play in the successful operation of your products.

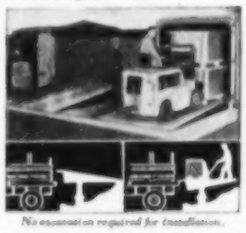
CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

BREVITY—Identify by IEN - 632 if you write the maker

New Hydraulic Gang Plank

Speeds Loading 50%



No excavation required for installation.

Globe Hoist has come through with a most effective "aspirin" for your loading headaches. It is a new hydraulic ramp that speeds up loading or unloading by 50% with a corresponding cut in time and labor costs. When a truck backs up to your dock, pressure on a button raises or lowers the ramp. A sturdy "lip" rests firmly on the truck bed. The ramp is self-leveling and "rides" with the truck as the springs flex.

This latest Globe Self-Leveling Ramp operates by air, air-oil, or motor pump, and is simply bolted on a load pad, thus requiring no excavation. It is easy to install. Quickly pays for itself.

Got a Lifting Problem?

GLOBE

has the answer

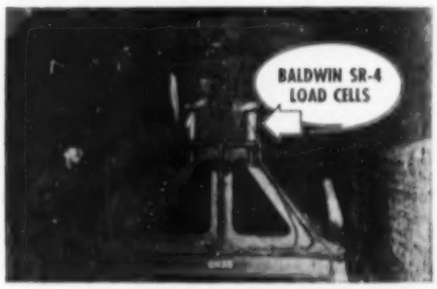
Muscle is the world's most wasteful lifting power. A Globe GoLIFT will do it cheaper and better.

Write today for "Modern Lifting." It is full of interesting information on Self Leveling Ramps, Machine Loading Lifts, Industrial Truck Service Lifts, Production Lifts, etc.

Write for Bulletin IE-300

GLOBE HOIST COMPANY, 100 E. Mermaid Lane, Philadelphia 18, Pa.
(Factories at Des Moines, Iowa and Philadelphia, Pa.)

BREVITY—Identify by IEN - 633 if you write the maker



NOVEL, *FAST* ELECTRONIC WEIGHING SPEEDS ALLOY STEEL MIXING

To produce small batches of alloy steels to exact chemical analysis, this steel maker built Baldwin SR-4 Load Cells into ladle supports. As needed, the weight of molten metal is quickly, accurately read on an indicator in a control pulpit . . . the exact amount of alloy to be added is determined, as is the number of ingots that can be poured.

Great economy has been realized . . . efficiency increased . . . alloy composition accurately predetermined.

Wherever there is a difficult problem in measuring torque, pressure, explosions, depth, weight, others, SR-4 measuring devices frequently offer an easy solution. Write for full information.

BALDWIN-LIMA-HAMILTON
TESTING HEADQUARTERS
Philadelphia 42, Pa.
In Canada: Peacock Bros., Ltd., Montreal, Quebec

BREVITY—Identify by IEN - 634 if you write the maker

Quadriga® SPECIAL WASHERS AND STAMPINGS

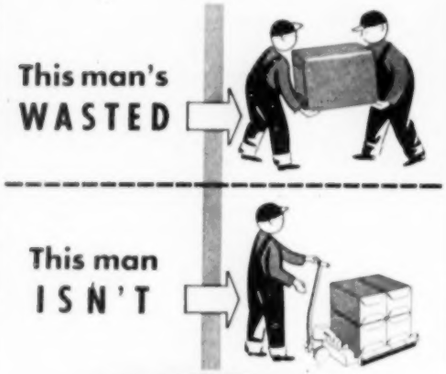
CUSTOM-FABRICATED FOR YOUR PRODUCTS

Quadriga washers and stampings are made to your precise specifications — to fit your particular needs. We'll quickly supply you with any quantity of flat washers; tension, spring, formed, drawn, cupped or finishing washers of any washer material. Also stampings of any material in any design. Press capacity to 150 tons, depth of draw to 4". We build dies. Send B/P, samples, or data today for a prompt estimate.

Write now for free technical catalog with valuable washer and stamping information.

Quadriga MANUFACTURING CO.
215A West Grand Avenue
CHICAGO 10, ILLINOIS

BREVITY—Identify by IEN - 635 if you write the maker



RAYMOND

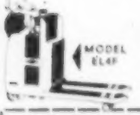
Lightweight LIFT TRUCK makes the difference

BEFORE — two men or more struggled to handle heavy loads. What a waste of precious work-time!

NOW one man plus a *RAYMOND* Lightweight Lift Truck handles 1-ton pallet loads with ease. The secret? Hydraulic power does all the lifting — a few quick pumps on the convenient foot pedal and the load's ready to be moved.

RAYMOND Lightweight Lift Trucks are so maneuverable they squeeze into hard-to-get-at places. Pallet entry is smooth and effortless — lateral movement, fast and easy. Use them to lighten rush hour handling — speed up short hauls — release power trucks for long hauls and tiering.

RAYMOND Lightweight LIFT TRUCK for double-face pallets illustrated. Also in Heavy-Duty Models with 2 or 3-ton capacities.



SPEEDS UP TO 6 MPH!

RAYMOND Low-Lift Rider Type Electric Truck. Ideal for long hauls, stock picking, loading, unloading. Capacity 2 tons.

The RAYMOND CORPORATION
Formerly LYON-Raymond Corporation
3564 Madison St., Greene, N.Y.

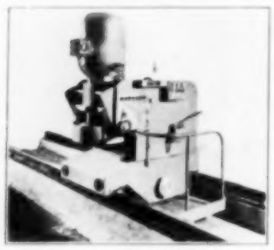
Gentlemen: Please send me the Bulletins indicated: 725, Lightweight Lift Truck; 727, Heavy Duty Lift Truck; 730, Low-Lift Rider Type Electric Truck.

Name _____ Title _____
Company _____
Street _____
City _____ State _____

BREVITY—Identify by IEN - 637 if you write the maker

GRINDING . . Surface machine to finish the edges of steel plate

Source: MERCURY ENGINEERING CORP.
2102 N. Farwell Ave., Milwaukee 2, Wis.



Operator rides carriage

The wheel head in this new Series E-20 grinding machine is mounted with its motor on trunnions in a carriage that rides a pair of rails. The carriage is driven along the rails by a travel motor. The rails are installed in precision position and work to be ground is mounted beside the machine. The trunnion mounting permits locating the wheel at any angle between horizontal and vertical. Axial feed, also motor driven, advances and retracts the spindle through 7 inches. The company is prepared to supply the machine for wheels from 18 to 30 in. in diameter and spindle motor to 40 hp. for reciprocating movement over its track to a maximum travel capacity of 30 feet.

BREVITY—Identify by IEN - 638 if you write the maker

CONTRACT WORK . . Wire harness assembled and shaped for specified use

Source: RUNZEL CORD & WIRE CO.
4727 Montrose Ave., Chicago 41, Ill.

Ready for your assembly

The company announces installation of facilities through which it is prepared to assemble complete wiring harness with terminals, shielded leads, jacks, plugs, ready for installation in specified electric and electronic equipment. The work is done on a contract basis following initial assembly to specification or to samples supplied by the user.

BREVITY—Identify by IEN - 639 if you write the maker

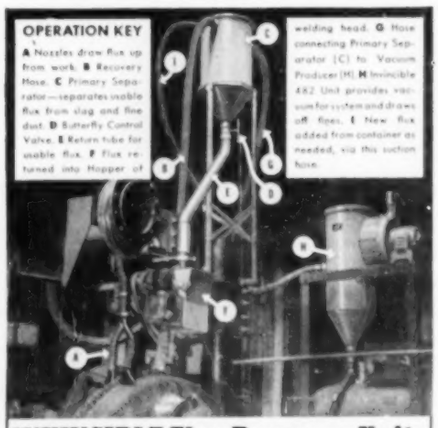
FLOORS . . Specification sheet on grease-resistant asphalt floor tile

Asphalt Tile Institute
101 Park Ave., New York 17, N. Y.

Detailed requirements are set forth in new three-sheet typewritten specification, "Grease Resistant Asphalt Tile". They cover materials, sampling, test methods and equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 640 if you write the maker



INVINCIBLE Flux Recovery Units

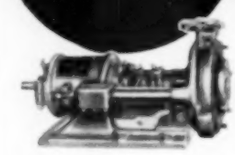
These installations soon pay for themselves by (1) saving labor, (2) salvaging valuable material, (3) making the welding operation more efficient. Both automatic and manual systems.

Write for complete information

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

BREVITY—Identify by IEN - 641 if you write the maker

What Makes a Good Chemical Pump?



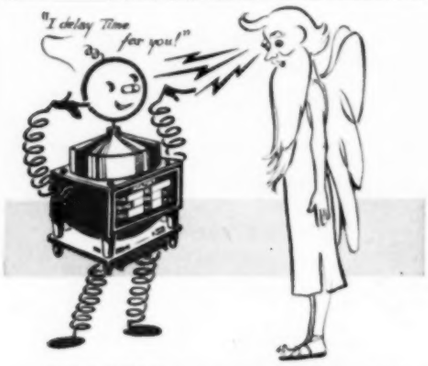
NAGLE TYPE TW CHEMICAL PUMP

1. High efficiency open impellers reduce the horsepower requirements.
2. Big heavy-load shafts and anti-friction bearings individually lubricated — withstand heavy loads year after year.
3. Water-end clamp ring eliminates studs and tapped holes. Simply loosen the set screws, give the plate a ⅛ turn and it's off.
4. A simplified double stuffing box, easily reached from above or below—another Nagle low cost servicing feature.
5. Drip pan and splash cover—arranged to protect all important structural members from corrosive liquids.
6. Casing, impeller and end-plate — the only parts that contact the mixture being pumped.

Nagle Pumps are available for every type of corrosive and abrasive application. Write for Bulletin 4906 . . . today!

Nagle Pumps, Inc.
INDUSTRIAL PUMPS FOR ABUSIVE APPLICATION
1241 CENTER AVE., CHICAGO HEIGHTS, ILL.

BREVITY—Identify by IEN - 642 if you write the maker



AN AGASTAT TIME DELAY RELAY FOR EVERY REQUIREMENT

AGASTAT is small and efficient. Furnished to operate in any position although designed for vertical mounting. Time delay range from .1 second to 5 or more minutes. Descriptive literature on request.

AGA AIRPORT LIGHTING · AGA CONTROLLED REFLECTORS · AGA MARINE LIGHTING EQUIPMENT · AGA AGASTAT TIME DELAY RELAYS

AMERICAN GAS ACCUMULATOR COMPANY
1027 NEWARK AVENUE - ELIZABETH 3, N. J.

BREVITY—Identify by IEN - 643 if you write the maker

This year hundreds of thousands of workers will work faster, more accurately and in greater comfort because the plants they work in are heated with WING REVOLVING UNIT HEATERS

Do you, too, want to work in comfort? Write for Bulletin HK-6

L. J. Wing Mfg. Co., 160 Vreeland Mills Rd., Linden, N.J.

REVOLVING UNIT HEATERS · VENTILATING FANS · DUCT FANS · WING · TURBINES · BLOWERS · DRAFT INDUCERS · MARINE VENTILATION

▼ BREVITY—identify by IEN - 644 if you write the maker ▼

Wherever an ACORN NUT is indicated

—slash your fastening costs with

PALNUT TRADEMARK **ACORN SELF-LOCKING NUTS**

- *Self-locking action holds tight under vibration*
- *Eliminates lockwashers*
- *Priced lower than ordinary acorn nuts*

ON light assemblies now using ordinary cap or acorn nuts, you save money and get a quick, secure fastening by changing to PALNUT Acorn Self-Locking Nuts. They are pleasingly dome shaped and have the famous PALNUT double-locking action that defies vibration. Very low in cost—light in weight—easily, speedily applied—cover rough, unsightly bolt ends, eliminate catching or scratching. Send details of application for free samples and further information.

The Palnut Co., 59 Cordier St., Irvington 11, N. J.
In Canada: P. L. Robertson Mfg. Co., Ltd., Milton, Ontario

PALNUT SELF-LOCKING **NUTS AND FASTENERS**
for quick, secure fastening of low cost

▼ BREVITY—identify by IEN - 645 if you write the maker ▼

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

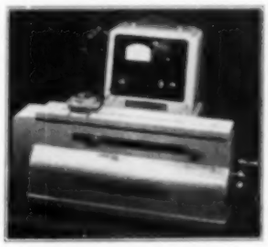
Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

▼ BREVITY—identify by IEN - 647 if you write the maker ▼

GAGE . . Electronic instrument checks master and working gages, tools

Source: SHEFFIELD CORP.
719-23 Springfield Ave., Dayton 1, Ohio



Accuracy starts here

Internalcheck N-6 is a new assembly of the company's internal gaging instrument with separate electronic gaging head. Normal application is in the tool room to check master and working ring gages, to set snap and length gages, to check tools and other precision work having one or more internal dimensions. It can be employed in production where small runs are made of a large variety of bore sizes requiring close tolerances. Two available designs include bench and floor assemblies.

A work piece is positioned on the vertically movable surface plate after the gage has been leveled and two vertical reed-mounted gaging arms with diamond gaging points have been positioned by means of precision blocks and clamps or a master ring. With both gaging arms centered at the greatest diameter of the bore to be checked, the table is moved vertically to explore the surface through a total movement of 1½ inches. Bores of greater depth to a maximum of 3 in. can be checked by turning the work over after one-half of the distance has been covered.

The gaging arms maintain uniform pressure for accurate indication to plus or minus direction from the master setting as indicated on the meter dial. Minimum gaging diameter is .750 inch. Maximum diameter is 12 inches. Amplification can be set at 1,000 to 10,000 to 1.

▼ BREVITY—identify by IEN - 648 if you write the maker ▼

TESTING . . Electronic instrument checks insulation to 10,000 volt dc.

Source: HERMAN H. STICHT CO.
24 Murray St., New York 7, N. Y.

Made in England

Test potential can be applied to insulation by this new electronic unit in a stepless range between 500 and 10,000 volt dc. The potential is obtained by rectifying and smoothing the output from a step-up air-core high-frequency transformer energized by a tube oscillator. By employing the high frequency it is possible to limit the dc short-circuit output to 0.5 ma. to eliminate danger for the operator.

Readings are made in kv. and in microamperes of leakage current on a meter mounted on the housing. Resistance values are calculated from the current and voltage readings. A selector switch can be set in any one of three positions for an overall range between 100 and 250,000 megohms.

Operation is subject to specification for 110 or 220-volt single-phase 50/60-cycle ac. with power input at 75 watts. The housing measures 15 by 6 by 10½ inches. Weight is 23 pounds. A small loudspeaker in the housing connects into the test circuit for audible indication of the degree of ionization in the test specimen to assist in detecting faulty specimens in a production run.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

▼ BREVITY—identify by IEN - 649 if you write the maker ▼

BREEZE Job-Engineered BELLOWS

ANOTHER BREEZE CORP. PRODUCT

...Give LASTING PROTECTION Where Ordinary Bellows Fail

Breeze welded diaphragm bellows meet the operating life cycle of any equipment in which they are used *because every Breeze bellows design is individually engineered and built for the job.*

Breeze has no "stock bellows," but if you have a vibration problem in ducts, large or small, or want permanently sealed valve enclosures in any type of piping system, or need bellows for torque transmission or other uses, Breeze experience can quickly provide the answer . . . and production can meet your requirements.

A Breeze bellows is dependable because each diaphragm is designed to work well within its elastic limit. This is accomplished by thorough analysis of each application and careful design of the bellows to withstand all requirements. "Job engineering" each individual type eliminates makeshifts, assures efficient performance.

Breeze bellows are made in stainless steel, inconel, monel, nickel, steel, or other weldable alloys.

Feel free to consult us without obligation on your existing bellows requirements, or any other project where reliable welded diaphragm type bellows might solve a design problem.

BREEZE CORPORATIONS, INC.
41-V S. Sixth St., Newark 17, N.J.

OTHER BREEZE PRODUCTS: ACTUATORS · RADIO SHIELDING · AERO-SEAL HOSE CLAMPS

▼ BREVITY—identify by IEN - 650 if you write the maker ▼

How HAYNES Alloy MACHINERY PARTS Reduce Machinery Maintenance . . .

★ 23 PAGES ★ 61 ILLUSTRATIONS

Get your copy of this new booklet describing long-wearing HAYNES alloy machinery parts. It describes over 30 types of cast and wrought alloy parts with unusually high resistance to corrosion, abrasion, or heat.

HAYNES alloy machinery parts have already made large savings on down time and machinery maintenance for countless manufacturers.

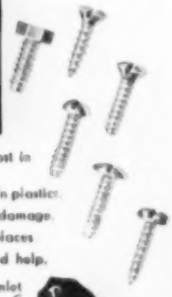
For a copy of the booklet describing the parts, write to our General Offices.

Haynes Stellite Company
A Division of Union Carbide and Carbon Corporation
UCC
General Offices and Plant: Kokomo, Indiana

"Haynes" is a trade mark of Union Carbide and Carbon Corporation.

▼ BREVITY—identify by IEN - 651 if you write the maker ▼

Pheoll TAPPING SCREWS Cut Assembly Costs 5 Different Ways



1. End tapping time and tap cost in sheet metal.
2. Eliminate need for tapped inserts in plastics.
3. Stop thread stripping and part damage.
4. Simplify assembly in tight places.
5. Speed production with unskilled help.

● Pheoll tapping screws—Type A Gimlet Point, Type B Blunt Point, and Type C Taper Point—save assembly time. These case-hardened steel screws are available in round, flat, oval, pan, and truss head types, either slotted or with Phillips recess, or they may be furnished with hexagon type heads. Finishes include bright steel, plated nickel, cadmium, brass, zinc or Parkerized, with chromium, bronze, etc., as special finishes. Types A and B tapping screws are carried in stock; Type C screws are made to order. Ask for further details.

Other Pheoll Products
Machine Screws, Machine Bolts
Special Screws and Bolts
Cap Screws, Machine Screw Nuts
Wood Screws, Thumb Screws
Brass Washers

Pheoll MANUFACTURING COMPANY • 8700 Roosevelt Road Chicago 50, Illinois
SCREWS • BOLTS • NUTS — *Industrial Fasteners and Holding Devices*

▼ BREVITY—identify by IEN - 652 if you write the maker ▼

Savings that Pay Off...

ROPER ROTARY PUMPS *are quick to Service*

Above view shows how Roper Pumps are designed for easy accessibility. Not necessary to disturb pipe connections or mountings.

When an installation requires inspection because some destructive foreign element causes trouble, quick servicing design cuts down-time to a minimum and speeds the job. Furthermore, Roper replacement parts are interchangeable and available on all current models.

The exploded view above shows the detail of disassembly of a Roper Series F Pump . . . available for pressures up to 300 P.S.I. — built in 15 sizes up to 300 G.P.M.

Write for Catalog Today
Capacities to 300 g.p.m.
Pressures to 1000 p.s.i.

GEO. D. ROPER CORP.
201 Blackhawk Park Avenue
ROCKFORD, ILLINOIS

ROPER *Rotary Pumps*

BREVITY—Identify by IEN - 653 if you write the maker

to the 99 plants in 100 who use SPRAY NOZZLES

WRITE FOR

In the search for doing things better and faster, have you overlooked the importance of spray nozzles? Your application may be commonplace or complex . . . but whatever it is, properly engineered spray nozzles can make a vast difference. Let Spraying Systems Co., America's foremost authority on industrial spray nozzles show you why and how. As a first step, write for catalogs.

SPRAYING SYSTEMS CO.
Engineers and Manufacturers
3208 Randolph Street
Bellwood, Illinois

Catalog No. 22
General Industrial Spray Nozzles
Catalog No. 23
Pneumatic Atomizing Nozzles

BREVITY—Identify by IEN - 654 if you write the maker

NEW HEAVY DUTY DIAL FEED

22" Diameter Table Top

★
4, 6, 9, 12, 18 or 36 stations
★
22" diameter table top positions up to 1000 lb. load quickly and accurately.
★
Write for Bulletin

Feeds work pieces to drilling machines, tappers, press rams, etc. Electrically controlled, air powered. Can be set to position 4, 6, 9, 12, 18 or 36 positions. Table swings into position gently. No abrupt impact. Locks firmly in position. Can be electrically synchronized to other machines. 22" diameter table top is easily removed for mounting jigs or fixtures, or an oversize table top.

Write for Bulletin T-85 today. Address: The Bellows Co., Dept. IEN 182, Akron 9, O.

The Bellows Co.
AKRON 9, OHIO

1309

BREVITY—Identify by IEN - 655 if you write the maker

20 Ways To Handle Special Loads

Free Bulletin on Attachments for E-P Fork Trucks

This profusely illustrated bulletin summarizes Elwell-Parker's 45 years' experience solving *unusual* materials handling problems. Often the peculiar shape or nature of a load requires a specially designed truck or attachment. Elwell-Parker has pioneered in this field. If your handling is "different", send for this bulletin NOW . . . Without obligation, you can also ask for expert advice from an EP man as to whether you need a standard Elwell-Parker or a specially "tailored" truck.

THE ELWELL-PARKER ELECTRIC COMPANY
4060 St. Clair Avenue • Cleveland 3, Ohio

BREVITY—Identify by IEN - 656 if you write the maker

TESTING . . Unit oscillator supplies 400 and 1,000 cycle output

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.

Lift is $60.

Type 1214-A is a new two-frequency oscillator to furnish approximately 0.2 watt to a balanced or unbalanced 8,000-ohm load. Distortion is less than plus or minus 2 per cent. It can be employed as a modulating source for a high-frequency oscillator. Assembly is in a housing that measures 5¾ by 5 by 6¼ inches. Operation is on 110-volt 60-cycle ac.

The assembly is characterized by the fact that it incorporates its own power supply using an iron-coil inductor as the tuning inductance of a Hartley circuit and an output coupling coil, wound on the same core, to isolate the output terminals from any direct connection to the oscillator.

BREVITY—Identify by IEN - 657 if you write the maker

COUNTING . . Electric unit closes circuit on predetermined quantity

Source: PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.

Range knob on housing

Counting speed is to 600 per min. for this new Type-WA Electric Batch counter. It can be actuated by any suitable switch, relay or photoelectric unit and can be located at any distance from the actual source of a count. At the end of the predetermined total it closes a built-in switch that can be used to actuate signals, conveyors, chute gates, packaging equipment.

Four number wheels register all units counted until reset by a complete turn of a reset knob or key. The unit also is available in non-reset design. It can be supplied to count any one quantity or any combination of quantities in five groups, minimum at 2 and maximum at 10,000.

BREVITY—Identify by IEN - 658 if you write the maker

PLASTICS . . Basic information on types, forms, manufacture, uses of plastics

Richardson Co.
2790-94 Lake St., Melrose Park, Ill.

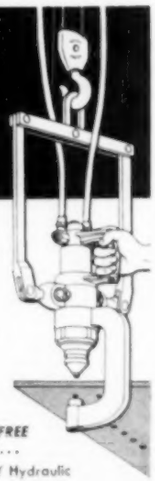
"Facts about Plastics" titles new 24-page booklet which the company will be happy to send you upon letterhead request. It tells in non-technical manner what plastics are, what they can do, thermosetting and thermoplastic materials, laminated and molded plastics, molding methods, design suggestions, typical industrial and consumer applications.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 659 if you write the maker

Here's the Answer to Low Cost Hole Piercing

DANLY



PORTABLE HYDRAULIC PIERCING UNITS

- Cylinder capacity 12½ tons!
- Built-in hydraulic stripping action
- Compact for portability and flexibility of application

SEND FOR THIS FREE BULLETIN NOW . . .
See how DANLY Hydraulic Metalworking Equipment Solves your specific problems!

DANLY MACHINE SPECIALTIES, INC.
2140 South Laramie Avenue,
Chicago 50, Illinois

BREVITY—Identify by IEN - 660 if you write the maker

CANNON PLUGS save time in starting oilfield pumping engines

Plug GB-3-21CFS accommodates cables from storage battery in maintenance truck. Made in split rubber shell for easy servicing and soldering. Button energizes starter solenoid switch.

Receptacle GB-3-34CDS of diecast aluminum alloy mounts on engine frame. Two 600-amp. pin contacts; one 40 amp. pin contact. Note polarizing groove.

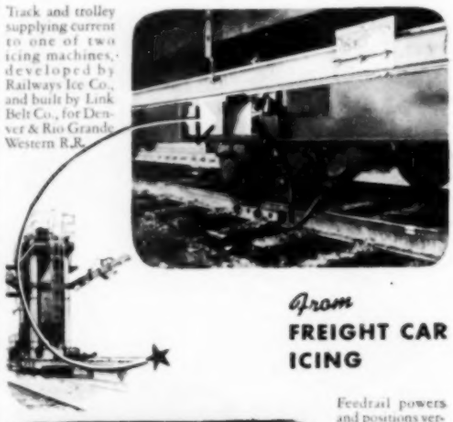
The shorter 40 amp. pin contact is grounded, disengages first to prevent arcing. It also handles push button solenoid switch circuit.

For complete information request Bulletin GB-648

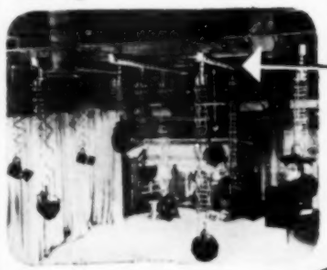
CANNON ELECTRIC

3209 Humboldt Street, Los Angeles 31, California. Canadian factory: Toronto, Ontario. World export: Frazar & Hansen, San Francisco, New York and Los Angeles.

BREVITY—Identify by IEN - 661 if you write the maker



Track and trolley supplying current to one of two icing machines, developed by Railways Ice Co., and built by Link Belt Co., for Denver & Rio Grande Western R.R.



From FREIGHT CAR ICING

Feedrail powers and positions vertically heavy TV lights by a flick of a switch

To TELECASTING

ELECTRIC FEEDRAIL®
Mobile Power Outlets Move Jobs on Schedule

A freight car iced in fifty seconds! Only a ten second interval between cars! When this modern icer is on the move, power is supplied by Feedrail for twelve motors totaling 179 HP plus 7½ KW for communications, lighting and coded control.

In telecasting, split-second timing to keep on schedule is essential. Feedrail mobility speeds the rearranging of studio lighting and provides a dependable, unfaltering source of power.

Industry is always on the move. Product changes demand flexible electrical power distribution. Moving Feedrail trolley outlets enclosed in overhead tracks roll quickly to where power is needed. When major changes are required – dismantle, rearrange and remount, reusing original units. Unit costs will decrease in direct ratio to the increased production facilities which Feedrail versatility affords. Write for literature.

Sold by leading electrical distributors. 46-B

ELECTRIC FEEDRAIL — Never Becomes Obsolete — FEEDRAIL CORPORATION
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET • NEW YORK 7, N. Y.

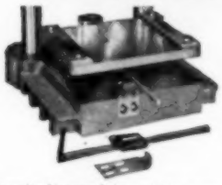
▼ BREVITY—Identify by IEN - 663 if you write the maker ▼

Adjustable Automatic Stock

FEED STOP for DIES

Dahlstrom Light Duty

AUTOSTOP



No drill jig...
No slotting...
No milling...

$1.75

Tested and improved through the years, the Dahlstrom Autostop will save hours of your high priced labor. Adjustable to work with blanking, progressive and compound dies. Mounts on stripper plate in 15 minutes. Handles sheet steel up to 1/16" x 6" or equivalent weight.

TO INSTALL: Just drill one 7/36-inch hole, then drill and tap four mounting holes per directions. That's all there is to it!

Trial order $1.75 each; lots of 12 $1.50 each. State whether for use on compound or progressive dies. *Write for free pamphlet.*

By the makers of the DAHLSTROM TAP GUIDE

Dahlstrom MANUFACTURING COMPANY
2516 W. LARPENTEUR AVE. • ST. PAUL 8, MINN.

▼ BREVITY—Identify by IEN - 664 if you write the maker ▼

Prevent die damage! ...with

MAGLINER
Magnesium
SAFETY TONGS

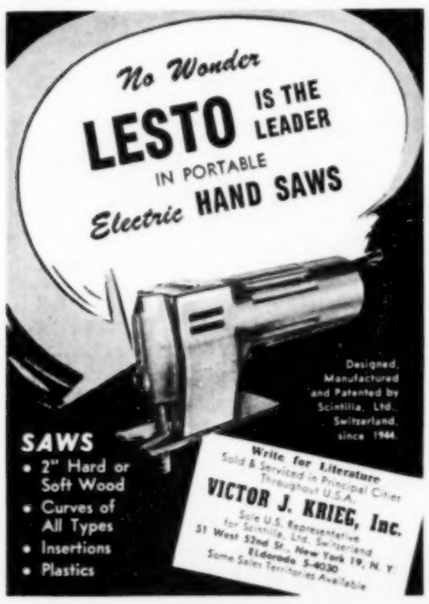
LIGHT! RIGID!
ROOMY HANDGRIPS!
AUTOMATIC CONTROLLED OPENING!

MANY MODELS TO CHOOSE FROM • Write for descriptive bulletin ST-501

Magline Inc.
P.O. BOX 383
PINCONNING, MICHIGAN

▼ BREVITY—Identify by IEN - 665 if you write the maker ▼

No Wonder
LESTO IS THE LEADER
IN PORTABLE
Electric **HAND SAWS**



Designed, Manufactured and Patented by Scintilla, Ltd. Switzerland, since 1944.

SAWS
- 2" Hard or Soft Wood
- Curves of All Types
- Insertions
- Plastics

Write for Literature
Sold & Serviced in Principal Cities Throughout U.S.A.
VICTOR J. KRIEG, Inc.
Sole U.S. Representative for Scintilla, Ltd. Switzerland
51 West 52nd St. New York 19, N. Y.
ELdorado 5-4030
Some Sales Territories Available

▼ BREVITY—Identify by IEN - 666 if you write the maker ▼

SAWING . . Circular hole saw, to 4½ in. for metals, plastic, wood

Source: MILLERS FALLS CO.
55-59 Wells St., Greenfield, Mass.

$4 to $18

Blu-Mol trade names a new line of hole saws in which high-speed steel is welded to an alloy-steel backing ring. It, in turn, is mounted on a plate with a threaded center for interchangeable application on a hexagon-shank spindle carrying a center-hole drill.

Holes can be cut to 1⅛ in. in depth in solid stock. Cuts can be made through two or more walls or partitions, through both sides of large pipe, or to any depth desired in stacked material. The line includes 40 sizes of saw, starting at 5/16 in., for three sizes of driving spindle or mandrel.

▼ BREVITY—Identify by IEN - 667 if you write the maker ▼

DRIVE . . Magnetic clutch provides variable speed transmission

Source: ELECTRIC MACHINERY MFG. CO.
821 2nd Ave. S. E., Minneapolis 13, Minn.

Ask for bulletin No. 4400-TEC-1107

Simplified design of the company's Regutron magnetic amplifier control, previously described IEN-4202-46, now employs a saturable-core reactor in the amplifier circuit. It eliminates the previously complicated electronic circuit and provides stepless control of speed within plus or minus 0.5 per cent. Control is active through a current-amplification ratio of approximately 20,000 to 1. The drive is available in ratings from 25 hp. and up.

▼ BREVITY—Identify by IEN - 668 if you write the maker ▼

DISPENSING . . Pyrex hand pump to deliver corrosive fluids safely

Source: LABORATORY INDUSTRIES INC.
4708-12 W. North Ave., Chicago 39, Ill.

No "squirt" pressure

Carboypump is a new Teflon-sealed Pyrex hand-operated pump measuring 1⅝ in. in diameter by 48 in. in height. The pump applies in a container holding a corrosive fluid. It is primed by two or three initial strokes and then will discharge the fluid on each upward and downward movement of the plunger. No pressure is set up other than that required to lift the liquid. The pump will handle most solvents, acids, alkalies and liquid organic materials. The Teflon seal ring can be replaced when worn. List is about $60.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

▼ BREVITY—Identify by IEN - 669 if you write the maker ▼

THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

LIQUIDS · OILS · POWDERS · PASTES

COMBINED LIQUIDS AND SOLIDS
1/500 oz. to 2 Pounds
20 to 70 Per Minute
Up to 750° F.

SAVE TIME AND MONEY WITH THE MATEER ALL ELECTRIC FILLING HEAD

Totally enclosed, manual or automatic. Accuracy as close as ±½%. Synchronize this self contained filling head with existing production lines and processing systems.

Jacketed and electrically heated hoppers available for handling cold or hot materials up to 750° F.

Hot waxes, insulating compounds and asphalts handled without difficulty.

Send full information and samples of material to be tested. Write Dept. 106 for fully illustrated bulletin.

G. DIEHL MATEER & CO.
Lincoln Highway • Devon, Pa.

▼ BREVITY—Identify by IEN - 670 if you write the maker ▼

HEVI DUTY ELECTRIC COMPANY

"MULTIPLE UNIT"
MUFFLE FURNACE
With Many Advantages

For Temperatures to 1850° F.

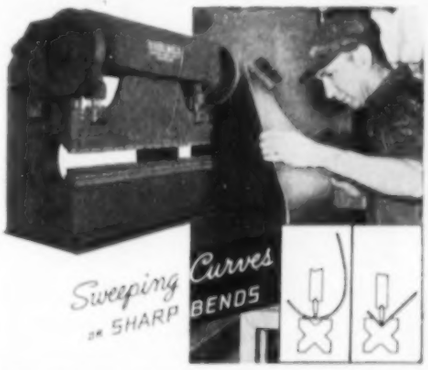
FOUR STANDARD SIZES

Write for Bulletin LAB-849

★ Less Heat Loss — Improved Insulation and No Rheostats
★ Better Control Through a 36-Step Tap Changing Transformer in the Pyramidal Base
★ Pyrometer and Transformer Control Assembly in Easily Removed Base Drawer
★ Reversible "Multiple Unit" Heating Elements

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

▼ BREVITY—Identify by IEN - 671 if you write the maker ▼



Sweeping curves or sharp bends are easily made on Steelweld Presses with standard 4-way bending dies, simply by adjusting the ram stroke. Blanking, drawing, corrugating and punching are also readily performed. A complete line of Steelwelds in capacities to 750 tons is available for plate to 20'0" long.

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4233 East 281st St., Wickliffe, O.

STEELWELD PRESSES

▼ BREVITY—Identify by IEN - 672 if you write the maker ▼

Rebuild Worn Parts by *Metallizing*

Save time, money and critical parts by Metallizing with new Moguletric Gun. Adds metal to metal with fine atomization for perfect bond. Simplified, easy to use, engineered to give trouble-free service.

Also ideal for spraying corrosion-resistant metal coatings and for production work.

If you already have metallizing equipment, why not consider a trade-in now for the new Moguletric Gun.

Write for new booklet containing complete information on equipment as well as production and maintenance applications.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 673 if you write the maker

2 free books

with the complete money-saving story on Wolmanized Lumber

How to avoid costly damage caused by rot and termites

Use Wolmanized* pressure-treated Lumber wherever timbers are exposed to conditions causing decay or termites. Preservatives that kill rot and termites are driven deeply into Wolmanized Lumber under high pressure (150 p.s.i.). This lasting protection—at low cost—helps Wolmanized Lumber last 3 to 5 times as long as untreated lumber!

Tells facts about millions of feet of Wolmanized Lumber in service in industries for years.

Tells how Wolman-treated Lumber is treated and where it can save you money.

Write for your free copies today!

American Lumber & Treating Co.
332 South Michigan Avenue
Chicago 4, Illinois

Wolmanized PRESSURE TREATED **Lumber**

Stops Rot and Termites

BREVITY—Identify by IEN - 674 if you write the maker

FRESH AIR REDUCES FATIGUE GIVE 'EM AIR—FRESH AIR! WATCH PRODUCTION CLIMB!

Metal Third Ventilator Hood Opens Locked in Any Desired Position With or Without Dampers Propeller Pitch Adjustable

Industrial Air Model T Roof Ventilator can be used as a supply fan or to discharge contaminated air. Rugged construction. Sizes for all specifications from 18" through 72" in diameter, belt or direct driven operation.

Duct Fans
Direct or Belt Driven
Utility Man Cooler
Portable Man Cooler
Roof Ventilators
Duct Type Fan
Duo Duct

Represented in All Principal Cities
Write Dept. 102 for Complete Catalog

THE HARVEY P. BERTRAM CO.
1008 W. Ninth St. Cincinnati, Ohio

BREVITY—Identify by IEN - 675 if you write the maker

WITH EXTRA CARE, PETE'S PANTS ARE CUT TO ACHIEVE A BREAK AND NOT A JUT

And cutting pipe threads to just the right length means a break for O-B valves. Too many threads allow the pipe to jam the seat before the joint is secure.

Send for free book on valve installation tips.

Ohio Brass VALVES
MANSFIELD OHIO

BREVITY—Identify by IEN - 676 if you write the maker

SWITCH . . Sensitive snap acting, for limit service, sealed assembly

Source: EXHIBIT SUPPLY CO.
4220-28 W. Lake St., Chicago 24, Ill.

For 100,000 starts

The mechanism in this new snap-acting limit switch is hermetically sealed in an inert atmosphere to completely exclude dirt and moisture and prevent corrosion under all conditions. The actuating lever is mounted on a pivot and is positioned by a tilting diaphragm that seals without setting up frictional contact. The assembly weighs 0.38 pound. Overall dimensions are $2\frac{1}{8}$ by $1\frac{3}{8}$ by $1\frac{1}{8}$ inches.

Construction is for double-pole double-throw action. Single-pole double-throw can be specified. Parts are assembled into an integral unit by copper brazing. The cover is held mechanically and is sealed by soldering. Connection is made through a 4 or 8 pin fitting with a rubber-sealed outer connector available to completely enclose the outer terminals. Nominal rating is 10 amp. on 220 volt ac.

BREVITY—Identify by IEN - 677 if you write the maker

PROTECTING . . Respirator for workers exposed to radioactive dust

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

Fits under a helmet

Dust as fine as that represented by freshly generated tobacco smoke is trapped by the filter element in this new Ultra-Filter respirator. It has rated filtering efficiency of 99.99 per cent against particles measuring 0.3 micron. The filter is made up of a number of metal-bound discs containing asbestos fibers to present a large surface area for low resistance to breathing. The elements are quickly replaceable.

The face piece is the company's Comfo cushion design to make a gas-tight fit. A bridge strap provides adjustment across the wearer's nose, the guarded exhalation valve minimizes resistance to outgoing air.

BREVITY—Identify by IEN - 678 if you write the maker

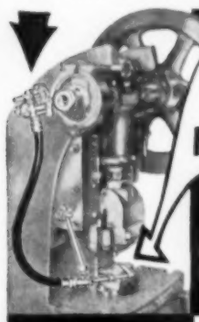
GRINDING . . How to sharpen saw blades with the company's grinding and hand filing machines

Mox Mfg. Co.
136-40 Stockton Ave., San Jose 11, Calif.

"Instruction Book" titles revised 28-page edition of the company's manual on use and care of its Acme saw shop equipment. It tells how to set up its grinding machine, how to sharpen rip and crosscut circular blades, planer knives. A second section covers a second machine for sharpening hand saws by a filing method.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 679 if you write the maker



keep HANDS and FINGERS away from PRESS RAM

LITTELL Air Blast Valves
Eject Automatically by Air . . . not by Hand

SAVE TIME . . . Faster production and lower labor costs
SAVE AIR . . . Reduce air consumption 92 percent
SAVE DIES . . . No damage to dies due to clogging
SAVE HANDS . . . Keep operators' hands and fingers out of danger zone
SAVE MONEY . . . Insurance premiums are lower when accidents are reduced.

QUICKLY INSTALLED—Littell Air Blast Valves can be installed on any make or size press in only a few minutes.

F. J. Littell MACHINE CO.
AIR DIVISION
4133 RAVENSWOOD AVE., CHICAGO 13, ILL.
— District Offices: Detroit and Cleveland —
Write for Catalog

BREVITY—Identify by IEN - 680 if you write the maker

specify the MARK-TIME "9100" TIME SWITCH for ACCURACY, DEPENDABILITY, ECONOMY!

Manufacturers of equipment requiring automatic delayed action timing can rely on Mark-Time 9100-Series time switches to do the job.

Mark-Time simplicity of design means fewer parts and fewer possibilities of failure. The sturdy, spring operated mechanism free from power variations is set and wound in one operation.

A model giving an audible bell signal is available.

Wide variety of modern dial and knob designs.

Write for further details and prices.

first where quality counts

MARK-TIME 9100-SERIES TIME SWITCH
U.L. approved for 5 amperes, 120 Volt A.C. operation.
Normally supplied for Center Stud mounting, other mountings available on request.
Timings from 1 minute to 3 hours.

M. H. RHODES, INC.
HARTFORD, CONNECTICUT

In Canada send inquiries to: Ontario Hughes Owens Co. Ottawa, Ontario

BREVITY—Identify by IEN - 681 if you write the maker

Operating expenses dip to a new low when you choose Portable Mixers from the complete Eastern Series. Available from 1/20 to 5 H.P. with a variety of speeds and motor enclosures. Your small initial investment pays rich dividends in economy.

Eastern's new Bulletin 510 gives complete mixer selection information.

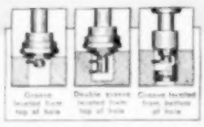
WRITE TO DEPT. RD

Eastern INDUSTRIES, INC.
REGENT ST., EAST NORWALK, CONN.

BREVITY—Identify by IEN - 682 if you write the maker

Waldes Truarc Internal Grooving Tool for precision cutting of internal grooves in bores and housings
FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!

Manufactured under U.S. Pat. 2,411,426



Internal groove-cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate . . . readily adaptable to individual requirements.

Designed for use in any hand drill or automatic drill press and screw machine . . . assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling . . . resulting in all-around savings in time and costs!

Write now for descriptive brochure giving mechanical details, cutting sizes . . . extra features

WALDES TRUARC GROOVING TOOL
WALDES KOHINOOR, INC.
47-16 Austel Pl., Long Island City 1, N.Y.

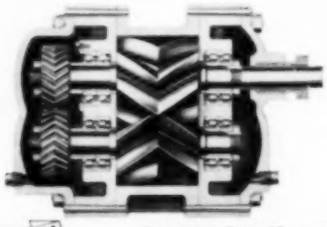
BREVITY—Identify by IEN - 683 if you write the maker

WARREN-QUIMBY ROTEX PUMPS are *Versatile*

For pumping lubricating, non-lubricating and viscous liquids such as acids, alkalis, coolants, diesel oil, dyes, fuel oil, gasoline, inks, lube oils, molasses, paints, paraffine, shellac, solvents, syrup, tar, varnishes and many other liquids.

TWO GENERAL TYPES AVAILABLE: Gear-in-head for clear liquids having sufficient lubricating qualities to protect driving gears and bearings. External gear and bearing for non-lubricating liquids such as gasoline, heavy tars, asphalts, acids, etc.

Warren Plant Facilities, Dependability, Quality and Service now behind WARREN-QUIMBY Pumps.



Your inquiries on Rotex and Screw types, as well as Warren's complete line of Centrifugal and Reciprocating Pumps are solicited.

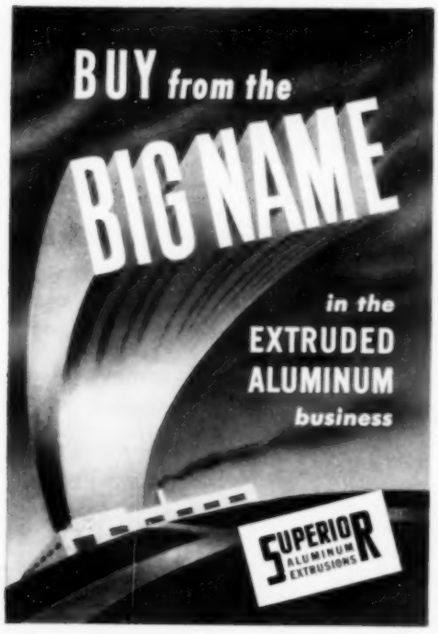
IEN-5

WARREN QUIMBY PUMPS

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC. • 62 Bridges Ave. • Warren, Mass.

BREVITY—Identify by IEN - 684 if you write the maker



Finished Mouldings for YOUR Product

● Whatever you make to sell . . . dinette sets, doors, laboratory instruments, functional shapes, mechanical pencils, windows, soda fountains . . . Youngstown Manufacturing, Inc., can be your supplier of aluminum in any extruded shape for your product. Shapes of intricate design, or standard shapes, polished or finished to your specifications, ready for your assembly line, is the business of Youngstown Manufacturing, Inc., the big name in the aluminum moulding business. Engineering and designing service available. Write about your requirements.

YOUNGSTOWN MANUFACTURING, INC.

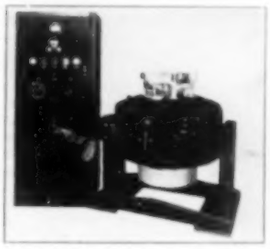
SUPERIOR ALUMINUM EXTRUSIONS

66-76 SOUTH PROSPECT ST.
YOUNGSTOWN 6, OHIO

BREVITY—Identify by IEN - 686 if you write the maker

TESTING . . Vibrating machine fatigue tests mechanisms to 185 pounds

Source: MB MFG. CO.
1064 State St., New Haven 11, Conn.



Shake well before selling

Model C-25 is new electric vibrating equipment on which mechanisms are secured for fatigue testing, to locate noise, to shake test, to determine damping and dynamic modulus, to identify resonant frequency and modes. The equipment will produce a continuous force output of 2,500 lb. in a frequency range adjustable between 3 and 500 cps. Total excursion is ½ inch. Capacity is to 100 with 185-lb. table load, 200 with a 60-lb. load. The equipment meets requirements for U.S.A.F. Specifications 41865-B and MIL-E-5272.

The vibrator is trunnion mounted so it can be adjusted for vertical or horizontal operation and can be installed without a special foundation. Weight of the vibrating assembly is 5,000 pounds. Overall dimensions are 45 by 43 by 42½ inches. Table diameter measures 20 inches.

Operating power is supplied by a motor-generator set and a motor-alternator set. A signal generator is attached directly to the table to produce a voltage output proportional to the velocity of the table motion. The equipment is completed by a control assembly, panel or console mounted.

BREVITY—Identify by IEN - 687 if you write the maker

TRUCK . . Engine driven tractor, rated drawbar pull is 2,000 pounds

Source: KALAMAZOO MFG. CO.
1825-29 E. Reed St., Kalamazoo 24F, Mich.

Model 3,600 is a new platform-type tractor-truck similar to the company's Model-2,000 load-carrying unit, previously described IEN-5291-51. It is equipped with a coupler at the back and a push plate at the front and is driven by a Model-TF two-cylinder air-cooled Wisconsin engine rating 13 hp. at 2,000 rpm. A Warner transmission provides three speeds forward to a maximum of 10 mph. and one speed in reverse. In addition to pulling trailers, the truck will carry loads on a platform measuring about 37 in. front to back behind the driver's seat.

Platform width is 42 inches. Length overall is about 85 in. including the coupler. Overall clearance height is about 49 inches. Turning radius measures 57 in. to the left, 62 in. to the right. Equipment includes a 6-volt electric starter and tractor-type generator, electric horn, electric head and tail lights. The gasoline tank holds 3 gallons. A flame-proof muffler with a spark arrestor is provided on the tail pipe.

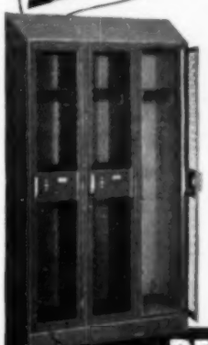
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 688 if you write the maker

Ventilates Work Clothes BETTER!

penco

"AIR-LITE" LOCKER with OPEN MESH DOOR



Provides maximum ventilation for work clothes and permits visual inspection of contents without opening door. Flattened expanded metal door has ¾" mesh openings—bigger than average but small enough to prevent theft. It's an *exclusive* Penco feature!

One of over 50 Penco Locker types and sizes.

Founded 1889 by C. Lewis Sappenfield

PENN METAL Corporation of Penna.

•80 OREGON AVENUE • PHILADELPHIA 48, PA.•

BREVITY—Identify by IEN - 689 if you write the maker

A Giant in Reliability

Security Tape really stays put. Straight-tearing, non-raveling, highly adhesive.

Its strong fabric of unusually high-tensile strength gives long-lasting protection.

Security has no pinholes to cause troublesome leaks....Ask your wholesaler for Security.

A Quality product of

UNITED STATES RUBBER COMPANY U.S. RUBBER

Tape Department, Rockefeller Center, New York 20, N. Y.

BREVITY—Identify by IEN - 690 if you write the maker

He checks 15 Dimensions, 8 Radii, 7 Angles in ONE operation

To check this part completely and accurately by usual methods, you might need as many as two dozen or more different gages—and you still wouldn't be sure all corners were sharp, all angles and radii exact. There's a much faster, more accurate way to do the job completely, one that requires no mechanical gages that can lose accuracy through wear.

On the Kodak Contour Projector, Model 3, you just slip the part into a holding fixture and compare its magnified image with a "chart-gage" over the bright screen. *Every* detail shown on the drawing is quickly and directly compared against the part itself, to close tolerances and in *one* operation. Little training or experience is required to measure all sorts of complex parts, large or small.

To get an idea of the large labor savings that the Kodak Contour Projector can bring to your inspection problems, get in touch with Eastman Kodak Company, Industrial Optical Sales Division, Rochester 4, N. Y.

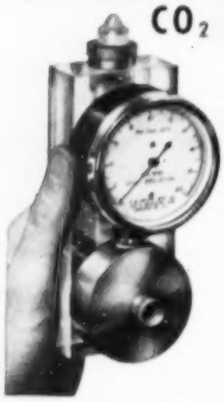
the KODAK CONTOUR PROJECTOR

If you want to check precision spur and helical gears in action, write for information about Kodak Conja-Gage Instrumentation.

▼ BREVITY—Identify by IEN - 692 if you write the maker ▼

Only 20 Seconds for a Complete Test!

The NEW DWYER TRANSPARENT CO_2 INDICATOR



The Dwyer 6900 is a really new CO_2 Indicator that assures greater efficiency and accuracy in operation. It actually takes but 20 seconds to make a complete test—and you can make over 500 tests per refill. Body is fabricated from a transparent solid "lucite" bar, making it practically unbreakable. Open-faced dial is easy to read. Furnished with a circular efficiency slide rule. Available in heavy metal case with provision for stack thermometer, draft gage and smoke tester.

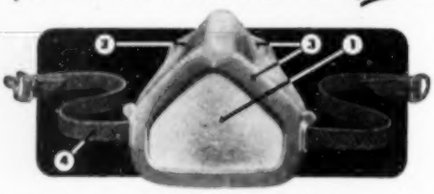
Also manufacturers of Draft Gages, Smoke Detectors, Manometers, Pitot Tubes, etc.

F. W. Dwyer Mfg. Co.

307 South Western Avenue Chicago 12, Ill.

▼ BREVITY—Identify by IEN - 693 if you write the maker ▼

4 Reasons why FLEX-A-FOAM (and only FLEX-A-FOAM) provides Dust Protection your workers will welcome and Wear



1. Pure latex washable filter purifies the air of non-toxic nuisance dusts as small as 1/25000 of an inch—yet it's easier to breathe and talk through than an ordinary pocket handkerchief! Out-wears throw-away type filter at much as 100 to 1.

2. Perfectly contoured for self-adjusting fit to every size and shape of face—designed for wear with spectacles or goggles with perfect comfort.

3. Positive-locking frames of polyethelene plastic, so flexible and tough they're unbreakable in normal usage. Complete mask weighs only 1 ounce. Attractively styled to suit the most discriminating wearer.

4. Defiance non-skid, natural rubber head-band with adjustable hook-and-eye fasteners holds mask firm and comfortably snug without tension or hair-pulling.

FLEX-A-FOAM FILTER MASK

Sample $1.40 postpaid

★

Write for new descriptive folder

THE GOGGLE PARTS COMPANY • CLEVELAND 13, OHIO

▼ BREVITY—Identify by IEN - 694 if you write the maker ▼

REACH HIGH PLACES SAFELY

A Ballymore Safety Step Ladder provides safe, sure footing in high places wherever you need it, prevents accidents and fear of accident.

Readily portable on ball bearing casters, but can't roll or kick out when supporting a person . . . weight automatically retracts casters, gives firm 4-point grip by rubber-tipped legs.

All steel construction. Three to eight steps with, one to three steps without, hand rails.

➡ WRITE TODAY FOR COMPLETE CATALOG

BALLYMORE COMPANY

WAYNE 4, PA.

▼ BREVITY—Identify by IEN - 695 if you write the maker ▼

MOTOR CONTROL . . Master switch, dust proof assembly for crane duty

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.

Interchangeable

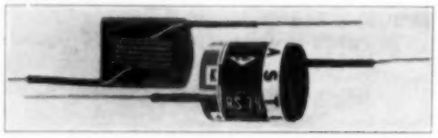
New design of the company's heavy-duty master switch employs a cast-aluminum cover for protection and to permit servicing in place of a previous cast-iron cover. The switch mechanism provides for any combination of one to five points of movement of the operating handle in clockwise or counter-clockwise direction.

Standard assemblies include a ball-and-rod handle but other types can be specified. These include the same handle with an off-position latch operated from a thumb lever on the handle, the handle with an auxiliary electric switch operated from a thumb liver, or with a spring-return mechanism built into the handle. There is also an under-lever mechanism. No change has been made in contacts, springs, cams. Dimensions are 13 by 10 by 14 in. with the handle in vertical position.

▼ BREVITY—Identify by IEN - 696 if you write the maker ▼

RECTIFYING . . Selenium assembly, closed design, 40 to 200 ma. dc.

Source: ELECTRONIC DEVICES INC. 427-31 12th St., Brooklyn 15, N. Y.



Detailed in Plastisel bulletin

Five cells positioned by brass spring clips are enclosed in a phenolic tube in this new Plastisel miniature selenium rectifier. The tube is then filled with synthetic wax having good thermal conductivity. The wax is rock hard at 100 deg. C. The assembly has tinned copper leads.

Smallest unit rates 40 ma. and measures ⅝ by ¾ in. over the tube. Largest rates 200 ma., measures 1⅛ by 1¼ inches.

▼ BREVITY—Identify by IEN - 697 if you write the maker ▼

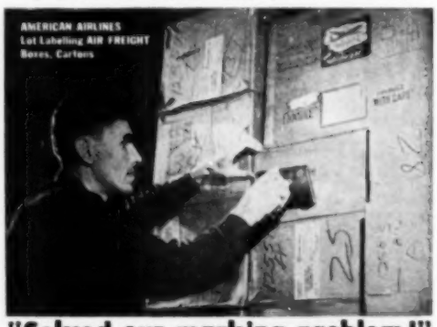
ALUMINUM . . Color sound film on aluminum extrusions and their use in product design

Reynolds Metals Co.
2502 S. 3rd St., Louisville 1, Ky.

Showing time for new 16-mm. color sound motion picture is about 30 minutes. Title is "The Shape of Things to Come". Topics include how extruded aluminum shapes are made, design possibilities inherent in extruded shapes, applications in machine parts, trucks and buses, window frames, architectural trim, pipe lines. The film is available on loan to groups.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 698 if you write the maker ▼



"Solved our marking problem!" say users everywhere

"The *MULTISTAMP* Hand Stamp Stencil Duplicator is the best thing we've seen for shipping tag and label addressing" . . "for marking boxes, cartons, packages." "Quick, clean, accurate, easy-to-use. Prints *1000* or more clear, sharp copies from *one stencil . . one inking*. Just type, write, trace or draw on low-cost stencil, snap in position and print . . like using a rubber-stamp. Non-mechanical, of non-corrosive metal. No moving parts, has replaceable ink pads. 8 complete outfits, $9.50 to $99.50.

IT PRINTS ON
POSTCARDS SHIPPING TAGS
BOXES CARTONS
LABELS PACKAGES

At Your Office or Shipping Room Supply Dealer

MULTISTAMP STENCIL DUPLICATOR

▼ BREVITY—Identify by IEN - 699 if you write the maker ▼

CUT PIPE THREADS CLEANER, BETTER, WITH LESS TIME AND LESS EFFORT

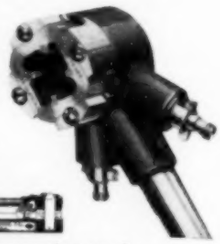
with the **REED**

REMOVABLE HEAD, SELF-FEEDING RATCHET THREADER

No pushing! Patented double-threaded throat leads die onto pipe.

Exclusive double-pawl ratchet cuts lost motion in half.

Positive-locking, quick-change heads will not fall out.



Convenient carrier supplied with sets of 3 or more heads.

Remember* — In a vise or pipe tool if it's a *REED* it's *RIGHT

REED TRADE MARK

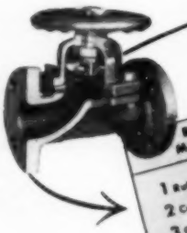
MANUFACTURING COMPANY
ERIE, PENNSYLVANIA

▼ BREVITY—Identify by IEN - 700 if you write the maker ▼

WHAT WOULD YOU SPECIFY

Fluid	Concentration	Temp.	Type of Valve	Valve Material
1 Sulphuric Acid	30%	120 F.		
2 Sulphuric Acid	100%	180 F.		
3 Hydrochloric Acid	33%	80 F.		
4 Hydrofluoric Acid	50%	125 F.		
5 Beer		200 F.		
6 Oxygen		Ambient		

We supplied Grinnell-Saunders Diaphragm Valves with . . .



Body Material	Diaphragm Material
1 Rubber lined	Natural rubber
2 Cast iron	KEL-F
3 Glass lined	Butyl
4 Magnesium	KEL-F
5 Polished bronze	White diaphragm
6 Cast iron*	Neoprene

*For oxygen service a high flash point lubricant is supplied. All valves for oxygen service are subjected to 300 lb. air underwater test.

In several of these cases other body materials or diaphragms might serve. Really important is the versatility of Grinnell-Saunders Diaphragm Valves in handling corrosive fluids, gases, compressed air, food, suspended solids . . . where corrosion, abrasion, contamination, clogging, leakage, maintenance are problems.

Grinnell-Saunders Valve bodies are stocked in cast iron, malleable iron, stainless steel, bronze, and aluminum, with other materials available on special order. Valve bodies can be lined with lead, glass, natural rubber or neoprene. Diaphragms are available of natural rubber and a number of synthetics to suit particular service conditions.

Features of the Grinnell-Saunders Diaphragm Valve

* diaphragm absolutely isolates working parts from fluid * diaphragm lifts high for streamlined flow in either direction * diaphragm presses tight for positive closure * body, lining and diaphragm materials to suit service * simple maintenance — diaphragm easily replaced.

GRINNELL

WHENEVER PIPING IS INVOLVED

Grinnell Company, Inc., Executive Offices, Providence, R. I.
Sales Offices and Warehouses in Principal Cities.

▼ BREVITY—Identify by IEN - 702 If you write the maker ▼

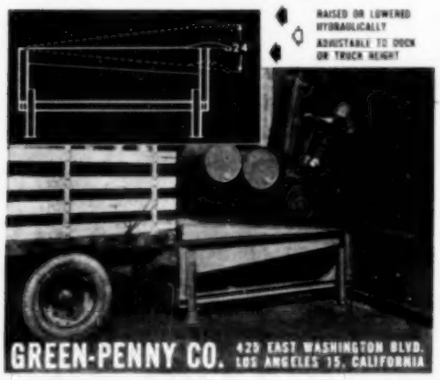
▼ BREVITY—Identify by IEN - 703 If you write the maker ▼

HYDRAULICALLY CONTROLLED adjustable Loading ramp

No installation is required for the Green-Penny Loading Ramp. Just set in place and plug into convenient 110v. outlet. No costly extras needed. It is adjustable to dock height and is hydraulically raised or lowered to truck bed. "It floats with the bed."

Easy to operate. Single-control lever, flush with the deck, raises or lowers ramp. Deck travel is 24". Capacity 20,000 lbs. Two sizes.

Simplify loading operations and make your shipping department more efficient. Write for Bulletin No. 100.



▼ BREVITY—Identify by IEN - 704 If you write the maker ▼

Naylor's fabrication service provides a dependable source for fittings, manifolds, piping and other equipment to meet your precision requirements. Made in carbon steel, stainless steel (Nos. 304, 316 and 347), monel, nickel, and copper alloys.

Send specifications for quotation.

NAYLOR PIPE COMPANY
1235 E. 92nd St., Chicago 19, Ill.
New York Office: 350 Madison Avenue, New York 17, N. Y.

▼ BREVITY—Identify by IEN - 705 If you write the maker ▼

TRUCK . . Attachment winch for die handling, 3½ to 5 ton rating

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

No crowbars, no nicks

New winch anchors in the battery compartment of the company's Series-JOM fork truck with 3½, 4 and 5-ton ratings. It provides power by which heavy dies and tools can be pulled from and back on the forks in handling between storage and machines. The motor-driven winch mounts drums and hook-equipped cables at both sides. The truck carries vertical rollers in front of the driver's compartment to take side thrust in the event that the cables are pulled at an angle with the truck axis. Control for the winch centers at the driver's position.

▼ BREVITY—Identify by IEN - 706 If you write the maker ▼

INSULATING . . Asbestos sheet, silicone saturated for electrical uses

Source: IRVINGTON VARNISH & INSULATOR CO.
4-8 Argyle Terrace, Irvington 11, N. J.

Sheets and rolls to 20 in. width

Silicone Novabestos is a new silicone-saturated asbestos sheet including 90 per cent asbestos and 3 per cent organic material. The sheet is processed to a thickness measuring 0.003 inch. It can be employed in operating temperatures to 180 deg. C. in continuous service.

Dielectric strength is 350 vpm. between 2-in. electrodes. Tensile strength is 10 lb. per in. of width on the warp and 3.5 oz. on the filler. Tear strength is 10 and 9 gm. and weight is 0.12 lb. per square yard.

▼ BREVITY—Identify by IEN - 707 If you write the maker ▼

GRINDING . . Surface machine for knife blades to 210 in. in length

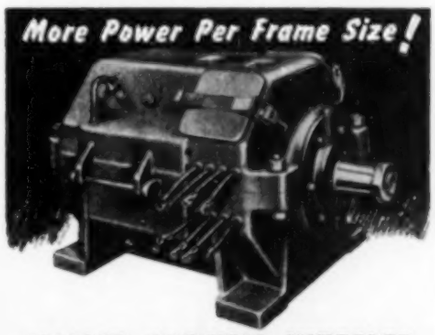
Source: SAMUEL C. ROGERS & CO.
185-89 Dutton Ave., Buffalo 11, N. Y.

Weighs 10½ ton

Series 220 is a new assembly in the company's line of heavy-duty machines to grind doctor blades, paper knives, chipper knives, shear blades. It also can be employed for work on flat faces and straight edges. It is assembled on a base measuring 30 ft. in length. Weight is 10½ ton. Drive is by a 15-hp. motor on the wheel head for the 20-in. segmental grinding wheel. A second variable-speed motor drives the table assembly on which a slotted knife bar is trunnion mounted.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

▼ BREVITY—Identify by IEN - 708 If you write the maker ▼



ELLIOTT CROCKER-WHEELER 600 Series DC Mill Motor

■ The right motor for heavy duty mill and crane drives from 5 to 265 hp. As tough as it looks, and packing up to 33-1/3% more power in each standard size frame. Also available separately forced ventilated, protected self-ventilated, back geared. Write for the Mill Motor Bulletin—address Elliott Company, Jeannette, Pa.

CW-36

ELLIOTT COMPANY — **CROCKER-WHEELER DIVISION . . . AMPERE, N. J.**
Branch Offices and Representatives in Principal Cities
Elliott Approved Service Shops Cover the Country

▼ BREVITY—Identify by IEN - 709 If you write the maker ▼

▼ BREVITY—Identify by IEN - 710 If you write the maker ▼

READ HOW TO CUT YOUR SMALL PARTS FINISHING COSTS

Norton Company's new, illustrated booklet contains 55 pages of latest facts on the most modern and efficient method of finishing small parts.

See how you can deburr, remove scale and flash, and produce surface finishes and radii to blueprint specifications — faster, and at lowest unit cost. Read how Norton ALUNDUM* abrasive helps shorten tumbling cycles, reduce scrap and reworking, and give consistently better finish.

Partial list of subjects includes types of equipment . . . cleaners . . . rust preventives . . . step-by-step description of tumbling process . . . rescreening of abrasive . . . mixing of parts.

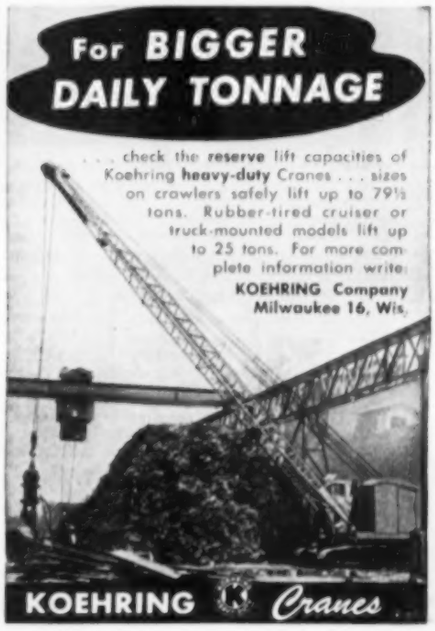
Ask your Norton distributor or representative for this valuable handbook, or write direct for Form 501.

NORTON COMPANY
Worcester 6, Mass.
Distributors in all principal cities

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries.

NORTON ABRASIVES
Making better products to make other products better

▼ BREVITY—Identify by IEN - 711 If you write the maker ▼



BREVITY—Identify by IEN-712 if you write the maker

TOPS IN THE SHOPS

for safety, sure grip and up to 10 times longer wear

Edmont No. 734

Super-tough coating of red NEOX, the reinforced neoprene that resists cutting, abrasion, grease, chemicals.

Positive non-slip grip. Seamless palm and thumb. Comfortable fabric lining, wide thumb span, curved fingers.

Specially recommended for metal working and finishing—handling, cleaning, dipping, plating, degreasing and sand-blasting.

General work glove with long-life, natural rubber "tread"

3 to 5 times longer wearing than leather palm gloves on many rough jobs; sure-gripping, wet or dry. Comfortable fabric, cooled on palm and thumb or over-all with tough rubber that safely resists cutting, tearing and severe abrasion.

FREE TEST OFFER: Send brief description of your operation. We will forward proper gloves for on-the-job test.

Grab it No. 62

Edmont Edmont Manufacturing Company, 1276 Walnut St., Coshocton, Ohio

World's largest maker of coated gloves for railroad workers

BREVITY—Identify by IEN-713 if you write the maker

The moral to our story?

Make the job easier for your maintenance personnel . . . and you *automatically* lower your maintenance costs. Let 'em wax as they clean . . . with a specially formulated material that performs 3 operations in one!

Lustreclean (pine-scented or plain) cleans . . . deodorizes . . . and deposits a light film of wax. Effective on any type of surface! No heavy scrubbing. No rinsing. Mop dry . . . buff the film lightly if a soft satiny finish is desired! Save time and labor cleaning floors, walls, woodwork — wherever excessive wear and heavy traffic has made daily maintenance a back-breaking job.

Lustreclean really cleans! Its emulsifying action loosens the most persistent dirt, grime . . . hard-to-remove rubber burns. No need to use harsh soaps or injurious chemicals. Proof? Ask for a sample and test it on the spots and blemishes your present cleaner won't remove!

Pine Lustreclean *is only one of many WEST products formulated for the promotion of sanitation. Others include floor sealers and waxes . . . washroom service . . . disinfectants . . . deodorants . . . insecticides . . . cleaners . . . soaps . . . protective creams. West is the exclusive distributor of Kotex Sanitary Napkins sold through vending machines.*

WEST DISINFECTING Company

42-16 WEST STREET, LONG ISLAND CITY 1, N. Y.
(64 BRANCHES IN U.S. AND CANADA)

SAVE $ $ $ WAX as you WASH

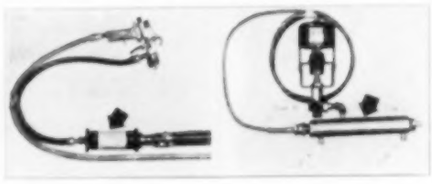
I'd like to try a sample of Lustreclean
Pine-Scented ☐ Plain ☐

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____ Dept 13

BREVITY—Identify by IEN-715 if you write the maker

PAINTING . . Heat exchanger controls paint viscosity to spray gun

Source: ARCO CO.
7303 Bessemer Ave., Dept. P, Cleveland 27, Ohio



The Hot Spray System

Control-Temp is a new heat exchanger available in two designs. One assembles in a hose line carrying paint to a spray gun. The other applies at a spray booth where mechanically operated guns are employed. The heater mounts in the paint line from 2 to 6 ft. ahead of the gun.

It takes steam at 5 to 10 lb. and brings the temperature of the paint up to about 190 deg. F. at the gun nozzle. With the paint at this temperature and air pressure between 50 and 70 lb. at room temperature the paint applies on a surface about 8 in. away from the gun at a temperature of approximately 72 deg. F.

Application of the heater minimizes need for solvent in the paint, keeps the paint at a constant viscosity for smooth deposit without sagging or running.

BREVITY—Identify by IEN-716 if you write the maker

THERMOMETER . . Resistance elements is adhered to surface for readings

Source: RUGE-DeFOREST INC.
74-73 Massachusetts Ave., Cambridge 39, Mass.

For moving or stationary surfaces

Type BN-3 and **BN-4** are new additions to the company's RDF Silkon thermometer elements, previously described IEN-257-50. They differ from the previous elements in that their fine nickel-wire elements are banded into a paper-thin Bakelite wafer. It is attached by means of Bakelite cement so it responds precisely to the surface temperature without appreciable time lag. Lead wires are provided for connection to the user's circuit.

Electrical resistance changes in the grid with change in temperature and this is employed to actuate an electric thermometer or to provide for automatic control. Both types are accurate in a range between minus 100 and plus 200 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Hundreds of products in the index, inside back cover

BREVITY—Identify by IEN-717 if you write the maker

FOR FINER APPEARANCE, PERMANENT READABILITY

Identify your products with metal name plates by

CHICAGO THRIFT-ETCHING CORPORATION

We'll gladly quote, without obligation to you, on your requirements for name plates, instruction plates, dials, panels, scales, etc. We are equipped also to apply special finishes to aluminum products and parts, including ANODIZING by the exclusive Alumlite process. Write today for detailed information and quotations.

CHICAGO THRIFT-ETCHING CORPORATION
1553 North Sheffield Avenue, Chicago 22, Ill., Dept. F
SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, IND.

BREVITY—Identify by IEN-718 if you write the maker

LOWEST COST IN LEAST SPACE PER UNIT OF ACTUAL COOLING CAPACITY!

PRITCHARD Series "PB"
COTOPACK*

COOLING TOWERS

Never before such high quality offered in a low cost tower. Suited for jacket water, air compressors and other services requiring dependable water cooling equipment. Centrifugal blower is corrosion-proof and balanced for quiet, high capacity, low horsepower, long life operation. Shipped completely assembled. Investigate this low cost tower today!

Write for Bulletin No. S.6.082A

* Reg. Trade Name

Cooling Towers
Specialized Heat Exchangers
Gas & Air Treating

J. F. Pritchard & Co.
EQUIPMENT DIVISION
Dept. No. 156 908 Grand Ave. Kansas City 6, Mo.

District Offices: CHICAGO • HOUSTON • NEW YORK • PITTSBURGH
TULSA • ST. LOUIS • Representatives in Principal Cities from Coast to Coast

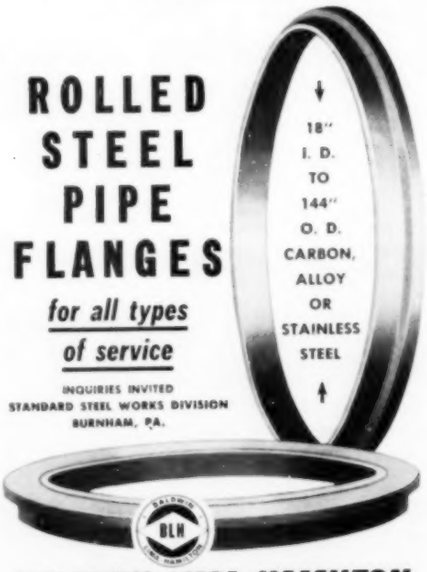
BREVITY—Identify by IEN-719 if you write the maker

ROLLED STEEL PIPE FLANGES

for all types of service

18" I. D. TO 144" O. D. CARBON, ALLOY OR STAINLESS STEEL

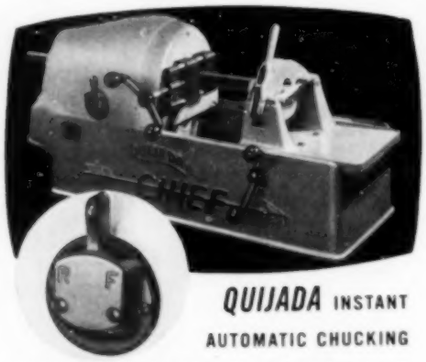
INQUIRIES INVITED
STANDARD STEEL WORKS DIVISION
BURNHAM, PA.



BALDWIN-LIMA-HAMILTON

General Offices: Philadelphia 42, Pa. Offices in Principal Cities

BREVITY—Identify by IEN-720 if you write the maker



QUIJADA INSTANT AUTOMATIC CHUCKING

CUTS PIPE AND CONDUIT THREADING TIME

The only truly automatic chuck on any threader. No more wrestling with stubborn chucks . . . just pull the switch lightly to chuck and push to unchuck. Four jaws front and rear securely grip and center pipe. Cut hours from your present threading methods with EASE!

SEE YOUR JOBBER OR WRITE FOR CATALOG #1E1

QUIJADA TOOL CO., INC.

5474 ALHAMBRA AVE., LOS ANGELES 32, CALIF.

▼ BREVITY—identify by IEN - 721 if you write the maker ▼

"COMMERCIAL"

Purchasing agents and designers can avoid costly tools and dies by getting a Commercial "Shape Book".

This Booklet shows a number of circular shapes that can be economically used in designs in various articles, and will show a reduction in costs, make easier assembly but increase the mechanical advantages.

Write for the Shape Book — no tool or die charges for these standard shapes.

THE COMMERCIAL SHEARING & STAMPING CO.
P. O. BOX 719 YOUNGSTOWN 1, OHIO

▼ BREVITY—identify by IEN - 722 if you write the maker ▼

ANOTHER CHAPTER IN THE HISTORY OF LEPEL

Lepel's NEW HOME

JUST ACROSS THE EAST RIVER IN WOODSIDE, NEW YORK CITY

The new building containing our new factory and offices, designed on the most modern architectural lines, reflects the steady gains made by Lepel for a quarter of a century.

The reputation enjoyed by Lepel in the field of Induction Heating equipment has been made possible by the high quality of the Lepel products and the integrity of the Lepel organization with its pleasant customer relationship.

Lepel

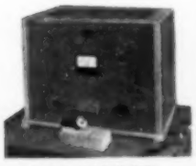
HIGH FREQUENCY Induction HEATING UNITS

SPARK GAP CONVERTERS

ELECTRONIC TUBE GENERATORS

ANY LEPEL UNIT DOES THESE JOBS— faster better cheaper

- HARDENING
- BRAZING
- MELTING
- SOLDERING
- ANNEALING



LOW COST 2 KW PORTABLE UNITS

Lepel

55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.
Tel. Havemeyer 6-4580

▼ BREVITY—identify by IEN - 724 if you write the maker ▼

HEATING . . Gas fired space unit in five sizes, 1,070 to 2,260 cfm.

Source: MODINE MFG. CO.
1724 Racine St., Racine, Wis.

No steam or water

Stainless steel burners mounted on a manifold in the bottom compartment of this new unit heater fire upward into vertical stainless-steel heat-exchanger tubes. Products of combustion move upward to issue beneath a draft converter at the top of the unit from where they flow to a vent at the rear. The bottom of the housing can be hinged downward for access to the burners. Air to be heated is drawn in by a motor-driven fan at the rear and is passed through the spaces between the tubes to issue at the front face.

Smallest unit in the line handles 1,070 cfm. of air at 70 deg. F. and delivers it at 115 deg. F. The largest unit handles 2,260 cfm. for delivery at 124 deg. F. The fan motor rates 1/15 to ¼ hp.

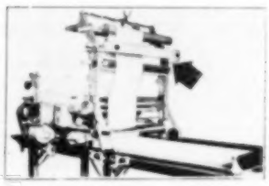
Controls include a shut-off that prevents gas from entering the burners when the unit is not in operation either as a result of thermostatic control action or electric power failure. The gas is shut off also if the pilot should go out for any reason or if the unit starts to over-heat due to the fan having stopped or air delivery being obstructed. The over-heat limit switch resets itself. The gas regulator is set at the factory for the type of gas to be used. It maintains correct operating pressure. A manual shut-off valve and a ground-joint union are located ahead of the control. The heater is approved by American Gas Association Laboratories for use on natural, manufactured, mixed and liquid petroleum gases.

Bulletin 651, 8 pages, presents illustrated detail information, dimension drawings, tables of weights and capacities.

▼ BREVITY—identify by IEN - 725 if you write the maker ▼

TESTING . . Feeler type detector signals holes in passing fabric

Source: CUTTING ROOM APPLIANCES CORP.
47 W. 25th St., 1st Floor, New York 10, N. Y.



Also checks woven goods

Feeler sections, five in number, mount hundreds of small feelers or fingers that jut out about ¼ in. from the surface of each section in this new mechanical hole detector for knitted fabrics. The sections mount on a laying-up machine so the fabric passes over the feelers to be spread on the cutting table.

Any hole in the fabric will catch a finger and the section carrying that finger will be pulled down. This movement opens the circuit to the motor driving the machine, or rings a bell, sounds a buzzer or turns on a light if the machine is hand operated. The equipment eliminates a separate inspection operation. It will detect any hole fault in the fabric.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—identify by IEN - 726 if you write the maker ▼

WORKING SHEET OR PLATE STEEL?

LOOK at what PULLMAX CAN DO

STRAIGHT CUTTING

Straight cutting, circle cutting, free hand cutting, slot cutting, beading, folding, louvering and many variations of these operations . . . ALL ON ONE PULLMAX MACHINE! Easy to set up and change tools . . . seven sizes of machines work materials up to 11/32" in mild steel . . . also works stainless steels, non-ferrous metals, wire mesh and plastics.

CIRCLE CUTTING

WRITE FOR LITERATURE

FOLDING

SLOT CUTTING

BEADING

FREEHAND

PULLMAX—A complete sheet and plate working shop in one machine.

AMERICAN PULLMAX CO., INC.
2631 NORTH WESTERN AVENUE CHICAGO 47, ILLINOIS

▼ BREVITY—identify by IEN - 727 if you write the maker ▼

Order Drill Jig Bushings from EX-CELL-O's Huge Stock

EX-CELL-O maintains a stock of over a quarter-million drill jig bushings in Detroit and also ample supplies in New York, Los Angeles, and Toronto. Orders for standard sizes can be filled immediately. Write today for your free copy of Ex-Cell-O Bushing Catalog No. 35371.

XLO 51-9

EX-CELL-O CORPORATION
DETROIT 32 • MICHIGAN

▼ BREVITY—identify by IEN - 728 if you write the maker ▼

Need More Plant Capacity?

Use Ours—

let us do your rolling, stamping, finishing and assembling operations.

LARGE WORK CAPACITY means favorable delivery. 93,000 sq. ft. floor space . . . over 100 stamping, rolling and finishing machines . . . tool and die facilities.

SPECIALIZED SERVICE. Quality of Greene work reflects years of experience in both civilian and defense sub-contracting work.

QUOTATIONS WITHOUT OBLIGATION. Send blueprints, or write or phone for personal call. Inquiries promptly answered.

G-13a

Greene of Racine

GREENE Manufacturing Company, Inc., Racine, Wis.

▼ BREVITY—identify by IEN - 729 if you write the maker ▼

ALL INFORMATION, METHODS, AND IDEAS NEEDED TO PRODUCE BETTER TOOLS AND DIES

Practical Data on Popular Analyses of Tool Steels, their Selection, Heat Treatment, and Use

in the Revised, Enlarged SIXTEENTH PRINTING of this

TOOL and DIE STEEL HANDBOOK

By Palmer and Luerssen

Here's the BOOK OF ANSWERS for every man responsible for tools and dies. Shows you how to increase your company's production from present equipment—how to reduce toolmaking trial and error, conserve tool steel, avoid die trouble, simplify heat treatment. Gives complete working information on everything from selection of the right steel to heat treating methods and equipment, hardness and toughness testing, latest data on high speed and hot work steels. 564 pages, 355 charts, photos, diagrams give you facts on how design affects heat treatment, hardenability tests, time required to heat different tools to required hardening and drawing temperatures, furnace atmospheres, quenching, tempering, trouble-shooting.

INCLUDING 80-PAGE ALPHABETICAL SELECTOR, BOUND RIGHT IN THE BOOK, SHOWING WHICH STEEL TO USE FOR ALMOST EVERY TOOL AND DIE. Use this book to train new men and upgrade skilled men.

OVER 100,000 COPIES IN USE! CLIP AND MAIL NOW

THE CARPENTER STEEL CO. • READING, PA. • DEPT. BX-2

Please send me, postpaid, your revised "Tool Steel Simplified". I enclose $2.00 ($2.50 outside U.S.A.) in full payment of the book.

NAME _____ TITLE _____
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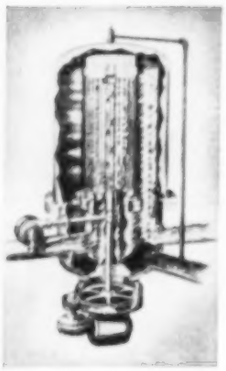
(Please print)

BREVITY—Identify by IEN - 730 if you write the maker

Save Water... Cut Bills

with this strainer



Make raw river or lake water fit for industrial use by passing it through a CUNO FLO-KLEAN.

FLO-KLEAN strains out trash at flow rates up to 20,000 gpm. No attention needed—with continuous back-wash cleaning* of the strainer and automatic top and bottom blow-down.

Reclaim used process water with FLO-KLEAN—save water bills and heating costs.

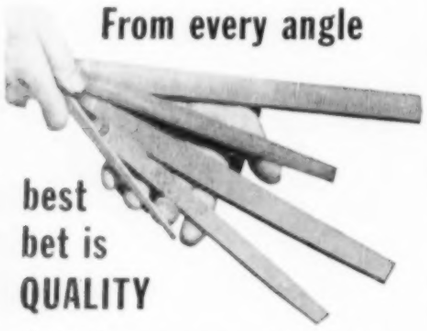
Write for FLO-KLEAN bulletin—see how FLO-KLEANS have paid for themselves in as short a time as six months. Cuno Engineering Corporation, Dept. 693E, South Vine Street, Meriden, Connecticut.

*From the backwash water is reclaimed—not a drop wasted!

CUNO
Fluid Conditioning
Removes More Sizes of Solids from More Types of Fluids

BREVITY—Identify by IEN - 731 if you write the maker

From every angle



best bet is QUALITY

GOOD FILES turn out more and better work for the industrial user.

GOOD FILES last longer, make more steel available for military needs.

GOOD FILES repay more than their cost in savings in workmen's time.

GOOD FILES are sold by distributors with good service in mind.

Get the book on GOOD FILES—write to us for "FILE FILOSOPHY"

NICHOLSON FILE CO., 33 Acorn St., Providence 1, R. I.
(In Canada, Port Hope, Ont.)

NICHOLSON U.S.A. — NICHOLSON — A FILE FOR EVERY PURPOSE

BREVITY—Identify by IEN - 732 if you write the maker

Send for complete data!

WARNER

electric BRAKES and CLUTCHES

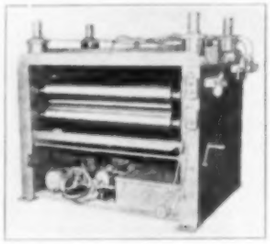
• Machine designers . . . get faster, better regulated, more automatic *stops* and *starts* from your machinery—at less cost—by using Warner electric brakes, clutches and clutch-brakes. Operated by electro-magnetic engagement of an armature and magnet, these new units offer the simplest, most modern and most direct system of stopping and starting machinery. They give you *less* trouble and *less* maintenance—*more torque for their size and weight.* Send for complete information and design data—Catalog IEN.

WARNER ELECTRIC BRAKE & CLUTCH CO.
BELOIT, WISCONSIN, U. S. A.

BREVITY—Identify by IEN - 733 if you write the maker

SPREADING .. Roller coating machine applies drawing compound to sheet steel

Source: UNION TOOL CORP.
320 E. Market St., Warsaw, Ind.



Operates at 75 fpm.

Illustrated is a recently improved machine in the company's line of roller-coating equipment. Drawing compound can be applied uniformly to one or both sides of steel sheets prior to feed into a press. The machine is equipped with three pairs of rolls, the first of hardened steel to deburr the stock, the second neoprene covered for application of the compound, the third of hardened steel to act as squeegee rolls to remove excess compound. A circulating pump feeds the coating rolls.

The machine is available to order for stock to 96 in. in width. Designs include equipment to apply the compound on the bottom only, the top only or both the top and bottom. Safety controls protect the operator. Bearings are self-aligning anti-friction design arranged to permit roll removal.

BREVITY—Identify by IEN - 734 if you write the maker

SAWING .. Carbide tipped blade for metal slitting, grooving, to 18 in.

Source: NORTH AMERICAN PRODUCTS CO.
3103 W. Cherry St., Milwaukee 8, Wis.

For precise work

Aluminum, cast iron, copper, steel are representative materials for which this new circular carbide-tipped saw blade has been designed. It has been used for production cuts in cast iron to 6¾ in. in depth and in steel to 2¼ inches. It has held sizes within 0.002 in. on slots measuring 54 in. in length.

Diameter range is 3 to 18 inches. Width is from 0.085 to ½ inch. Carbide tips are brazed in place. The teeth in back of them are a bit narrower than the tips for clearance. The body faces in the blade are ground on the two sides in standard arrangement.

BREVITY—Identify by IEN - 735 if you write the maker

NICKEL ALLOYS .. Fusion welding described in revised 44-page technical bulletin

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

Age-hardening alloys to welding supplies is the scope of subjects treated in revised Technical Bulletin T-2 on fusion welding of nickel and high-nickel alloys. Representative topics are joint design, electrode requirements and positions, gas welding, tank lining, cutting, pickling.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 736 if you write the maker

Toledo SIMPACT—self-contained, adjustable threader, 1" to 2" pipe.

You'll do better with Toledo Pipe Tools and Power Pipe Machines on the job! *Better workmanship* . . . Toledo assures clean-cut threads for tight, leak-proof joints. *Faster production* in threading, cutting, reaming . . . ease of operation . . . accurate, efficient performance. *Lower costs* . . . Toledo dependability saves time and labor. Write for catalog. The Toledo Pipe Threading Machine Co., Toledo, Ohio.

RELY ON THE LEADER TOLEDO
PIPE TOOLS . . . POWER PIPE MACHINES . . . POWER DRIVES

BREVITY—Identify by IEN - 737 if you write the maker

On any metal finishing problem

DEPEND on DU-LITE TO SAVE TIME

Courtesy C. J. Bates & Son

Here's an example...

Calcium buffing compound was formerly removed from the fluted surfaces of these tweezers by costly hand brushing and follow up cleaning rinse. After the switch to Du-Lite's safety soak solvent, Dynakleen, the compound was removed in seconds and the tweezers quick-dried to a sparkling finish, with no other operations necessary.

What's YOUR problem?

Du-Lite's service to industry is complete from research on specific metal finishing problems to installation of processing equipment. Du-Lite's line includes cleaners, strippers, blacking agents, wetting agents, passivating agents, rust preventatives, burnishing compounds etc. for any type of metal.

See your nearest Du-Lite Field Engineer or write for more information.

Du-Lite DU-LITE CHEMICAL CORP. MIDDLETOWN • CONN
METAL FINISHING SPECIALISTS

BREVITY—Identify by IEN - 738 if you write the maker

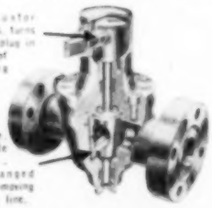
"at last—a valve that fills all our requirements"

Cameron NON-LUBRICATED LIFT-PLUG VALVE

These valves are credited with outstanding performance in such extremely severe services as: highly corrosive chemicals (HF and H_2SO_4) in refinery alkylation units; a process plant operating at 1600 degrees F. and at practically absolute vacuum; a producing oil well where it was required to operate daily at 6500 lbs. pressure. Obviously, with a good record on these services, the Cameron Non-Lubricated Lift-Plug Valve fills run-of-the-mill valve requirements in a walk.

The novel mechanical features of this valve include a separate and renewable seat which permits any desired trim for special services and facilitates repairs without removing the valve from the line. Being non-lubricated, it requires no periodic attention and saves maintenance expense. Also, this feature is particularly desirable in a wide range of services, from food processing plants to aviation gasoline refineries, where it is essential to keep valve lubricants out of the line product.

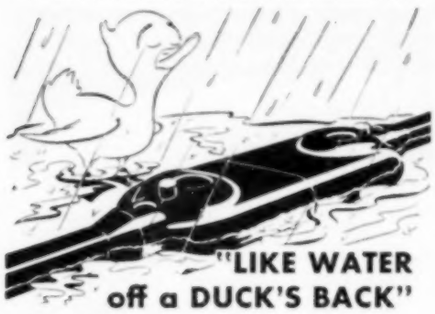
Send today for a copy of the Cameron Valve Catalog. It tells the complete story of this truly remarkable valve.



Cameron IRON WORKS, INC.
P. O. BOX 1212, HOUSTON, TEXAS

Export: 74 Trinity Place, New York, N. Y. Represented in the sterling area by British Oilfield Equipment Co., Ltd., Duke's Court, St. James's, London S.W.1, Eng.

▼ BREVITY—Identify by IEN - 740 if you write the maker ▼



"LIKE WATER off a DUCK'S BACK"

Moisture cannot penetrate the resilient rubber body of a JOY electrical connector . . . even mating pins and sockets are fully protected (when connected). Sealing action between plugs and sockets is automatically completed each time connections are made — through patented face construction of connectors.

Molded as integral Neoprene rubber units and permanently vulcanized to their cables — JOY plugs and inserts can't crack or shatter and are highly resistant to the deteriorating effects of grime, fluids, humidity and temperature changes. All the outstanding advantages of wear-resistant rubber are engineered to peak performance in JOY connectors. Write for descriptive bulletins. 749-2

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD. SALT (ONTARIO)

• More than 100 Years of Engineering Leadership •

▼ BREVITY—Identify by IEN - 741 if you write the maker ▼

How to cut loading time and reduce damage on carload shipments

"An investment in knowledge pays the best interest."
—Ben Franklin's Almanac, 1757

A major cost factor in shipping any product in carload lots is *handling*, and another is damage in transit.

Today many manufacturers have learned how to get big savings on both these items. They use Acme Unit-Load Band.

It does away with costly bracing materials . . . minimizes danger of damage . . . makes unloading safer, easier, quicker.

It's easy—unskilled loading crews quickly grasp the principle of Unit-Load, learn to use Acme Unit-Load tools.

It saves real money. For example, the Electric Storage Battery Company, Philadelphia, cut handling costs 65% on unloading and storing carload shipments of lumber.

We look forward to the day when we can supply Acme Unit-Load Band to everybody who wants it, in the quantities they want. Meanwhile, why not get all the information you can about it? Ask your Acme Steel representative, or write Dept. IEN-12.

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8
Steel Strapping — Stitching Machines & Wire — Venetian Blind Slat Stock — Corrugated Fasteners — Strip Steel

ACME STEEL

▼ BREVITY—Identify by IEN - 743 if you write the maker ▼

CRUSHING . . Triple roll machine rates 500 ton per hour of 4 in. product

Source: PIONEER ENGINEERING WORKS INC.
1513-17 Central Ave., Minneapolis 13, Minn.

It's husky

New size, 54 by 24 in., has been added to the company's line of triple-roll crushing machines. The new machine is designed for reduction crushing behind a No. 3042 or larger jaw crusher. It is available for stationary or portable installation. The stage of reduction varies from 6¼ to 2 in. when producing minimum sizes of product from 4 to ¼ in. minus respectively so that pieces to 9 by 9 in. can be fed when producing 4 in. minus products. When producing ¼-in. minus products maximum feed is 2¼ by 2¼ inches.

▼ BREVITY—Identify by IEN - 744 if you write the maker ▼

CLEANING . . Liquid material for maintenance cleaning and sanitizing

Source: WEST DISINFECTING CO.
42-18 West St., Long Island City 1, N. Y.

Detail data upon request

All-Purpose designates one of two new liquid materials added to the company's line for maintenance use. It is suitable for scrubbing, mopping, washing floors, woodwork, painted walls, windows using one part of the liquid to 45 parts of water or 3 oz. per gal. of water. It is a balanced formulation of soap and detergents that will not leave a residue or film when applied to a dirty surface. Packaging is in 15 to 55-gal. drums.

Sanikleen trade names the second of the new materials. It combines an ammonium compound and a synthetic detergent. It is employed in the proportion of 1 oz. per gal. of water for general use over surfaces to be mopped, scrubbed or brushed. The liquid is odorless, non-toxic, essentially neutral in pH. It is packaged in gallon glass jugs.

▼ BREVITY—Identify by IEN - 745 if you write the maker ▼

BULLETIN BOARD . . Mounts on wall to show department safety records

Source: INDUSTRIAL PRODUCTS CO.
2801 N. Fourth St., Philadelphia 33, Pa.

Dimensions are 20 in. in width by 30 in. in height for this new Safety Scoreboard. It is finished with a green background and white letters. It mounts two blackboard-finished panels that enclose the word "days" and provide space, to the left, to write in numbers with chalk. Construction is in 20-gage steel. Finish is enamel for indoor or outdoor use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 746 if you write the maker ▼

▼ BREVITY—Identify by IEN - 747 if you write the maker ▼

One ounce of dust distributed over an assembly or inspection bench, or in the wrong place in a ceramic or finishing plant can cost thousands of dollars in rejects or service complaints in the field.

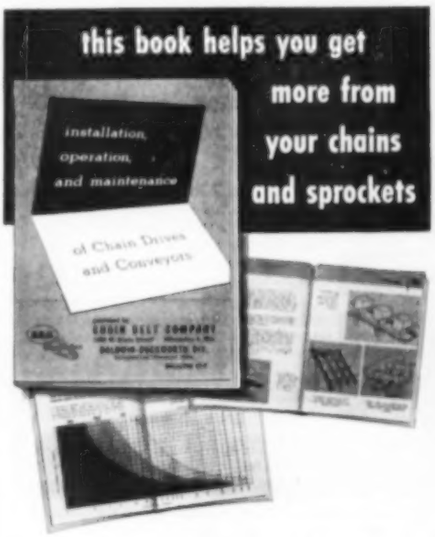
And how little it would cost to provide every assembly and inspection bench with vacuum tools and put automatic dust removing devices on all moving production lines.

You pipe compressed air all over the plant, just like water, gas, electricity. Consider Spencer Vacuum the same way—it's the new tool of industry. You won't be the first to try it in your industry. Bulletin No. 144 shows 132 ways it is cutting costs—improving sanitation. Ask for it.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
439-Q

▼ BREVITY—Identify by IEN - 748 if you write the maker ▼

MAINTENANCE MEN!



Here's just what you're looking for to help you get longer life from your chain drives and conveyors. This new pocket-size handbook is packed with useful tips that are of real value.

There are chapters devoted to installation, lubrication, operation, repair and storage as well as a number of helpful sketches, charts and graphs. One novel feature is a detailed check chart on "Cures for Sick Chains." It's a book you'll want and keep, and it's yours for the asking. Send for your copy today.

REX *Just use the coupon*
BALDWIN-REX

Chain Belt COMPANY
OF MILWAUKEE

Chain Belt Company 52-407A
1675 W. Bruce St., Milwaukee 4, Wis.
Gentlemen: Please send me ( ) copies of your Bulletin 51-7.

Name _____
Company _____ Dept. _____
Address _____
City _____ State _____

BREVITY—Identify by IEN - 750 if you write the maker

New EFFICIENCY FOR ANY VISE JOB

"Both Hands Free"

STUDEBAKER HYDRAULIC SPEEDVISE

MAKES A HIGH PRODUCTION TOOL OF THE OLD FASHIONED SCREW VISE

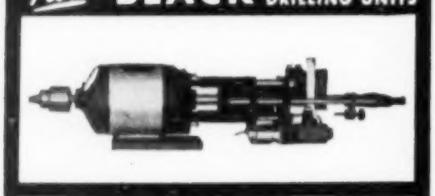
This SPEEDVISE will cut your costs on precision assembly, forming, punching, presswork, cutting, straightening, bending and other vise jobs. Entirely foot controlled—operators hands free to guide work. Self contained — no outside power required. Slow or fast action — pressure from a feather touch to maximum. Can be mounted anywhere—portable.

Model 500 — Pressures to 5 tons. Model 750 — Pressures to 7½ tons. Write for details and prices.

Studebaker MACHINE COMPANY
1235 S. 19th AVENUE, MAYWOOD, ILL.

BREVITY—Identify by IEN - 751 if you write the maker

New BLACK SELF-CONTAINED DRILLING UNITS



NO SPLINES — Self-contained units, at low cost, for drilling, tapping, chamfering, reaming and similar operations.

NO GEARS — New principle employs traversing motor shaft for work spindle, applies even torque with practically no end play. Drill has air feed for rapid advance to work—hydraulic control to completion of work cycle with uniform feed. Tapping unit controlled to tap follows its own lead without chamfering first thread or stripping threads on return stroke. Easy adjustment—depth accuracy to within .001".

NO CAMS

NO CLUTCHES — Operate in any position. Wide range of speeds and sizes.

NO REVOLVING WEIGHTS

Write for complete information

THE BLACK DRILL COMPANY
1378 EAST 222nd STREET CLEVELAND 17, OHIO

BREVITY—Identify by IEN - 752 if you write the maker

IF YOU WALK ON IT IT CALLS FOR OPEN STEEL FLOORING

If you are planning a new building, or of modernizing old walking surfaces indoors or out, look into the advantages of open steel flooring . . . the versatile flooring . . . now! New catalog illustrates and describes wide range of modern applications, its safety features, strength, simplicity of installation and maintenance. Send for a copy.

NEW **FREE** IDEA-BOOK

write today

OPEN STEEL FLOORING INSTITUTE, INC.
2211 B First National Bank Building
Pittsburgh 22, Pa.

MEMBERS

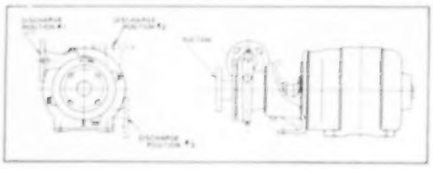
These Manufacturers assure top quality engineered grating

BLAW-KNOX COMPANY, Pittsburgh, Pa.
HENDRICK MANUFACTURING CO., Carbondale, Pa.
IRVING SUBWAY GRATING CO., INC., Long Island City, N.Y.
STANDARD STEEL SPRING CO., Gary, Indiana
WALTER BATES CO., INC., Joliet, Illinois
THE TRILOK COMPANY, Pittsburgh, Pa.

BREVITY—Identify by IEN - 753 if you write the maker

PUMP . . Single stage centrifugal, twenty sizes to 2,000 gpm. and 400 feet

Source: GOULDS PUMPS INC.
301 Fall St., Seneca Falls, N. Y.



Details in Bulletin 710-1

Three sizes have been added to the company's Close-Cupld line of single-stage closed-impeller centrifugal pumps. Parts have been standardized to a point where many of the units in one pump assembly can be used interchangeably in another. Each assembly is a combination of motor and pump in which the bronze impeller is keyed to the end of the extended motor shaft. A sleeve covers the shaft bark of the impeller to the motor end frame for operation inside a stuffing box fitted with conventional packing rings or mechanical seal.

An adaptor maintains rigid assembly between the pump casing and the motor end bracket. It is open at the top for access to the glands and stuffing box. It is equipped with a foot to provide support for the overhung swing. Each pump in the line is built in right-hand construction for clockwise rotation when viewed from the motor end.

BREVITY—Identify by IEN - 754 if you write the maker

THERMOMETER . . Magnifier clips on thermometer stem to read

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Readings can be made from a considerable distance on an ordinary laboratory thermometer when it is equipped with this new magnifier attachment. Spring clips hold it in position. A hair line engraved across the magnifier body can be set at a desired temperature by sliding the whole unit on the stem. List price is $24 a dozen.

BREVITY—Identify by IEN - 755 if you write the maker

FASTENINGS . . Booklet of design information on the company's welding studs and their application

Nelson Stud Welding
E. 28th St. & Toledo Ave., Lorain, Ohio

Materials, specifications of standard welding studs, locating methods, template design, suggested methods for accommodating fillet, are presented by text and drawings in new 8-page bulletin, "How to Design for Nelwelding". Also shown are limiting dimensions of the manual arc-application gun and a table of minimum stud clearances.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 756 if you write the maker

ELIMINATE EXHAUST FUMES!

Use OCM Catalytic Exhausts on Your Gasoline Powered Fork Lift Trucks

With the OCM exhaust, gasoline powered fork lift trucks may be operated safely inside factories, in cold storage areas and food processing plants, in low-ceilinged, badly ventilated warehouses, and for box-car and shipshold loading and unloading operations.

The OCM exhaust replaces the standard muffler on any industrial truck. Write for more facts today.

Fork Lift Truck with Standard Muffler.

Fork Lift Truck with OCM exhaust.

LISTED BY UNDERWRITERS' LABORATORIES, INC.

LONG LIFE . . . FULLY TESTED . . . GUARANTEED PERFORMANCE

OXY CATALYST MFG. CO. INC.
113 CONESTOGA RD., WAYNE, PA.

BREVITY—Identify by IEN - 757 if you write the maker

For the Answer to Your Insulation Problem LOOK THROUGH *This* LINE

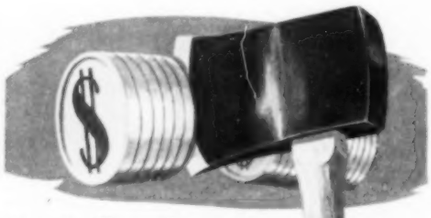
Can't guarantee that the Varflex Line will solve every insulation problem. But . . . Mary's the problem—large, small, unusual—that Varflex Electrical Sleeving or Tubing has solved. The Varflex range of insulating problem solvers is vast—chances are you'll find the solution to your Electrical insulating problem somewhere in the Varflex Line.

Varglas Silicone retains properties at 500° F or – 85° F. **Varglas Tubing Impregnated with General Electric Permafil,** tough, flexible, heat-resistant. **Varglas Sleeving and Tubing,** numerous types and grades. **Varglas Non-Fray Sleeving,** for temperatures up to 1200° F. **Varflo Tubing and Sleeving,** made of Fiberglas, priced like cotton. **Varflex Cotton Tubing and Sleeving** where Fiberglas is not required. **Syntholvar Extruded Plastic Tubing,** made from vinyl polymers.

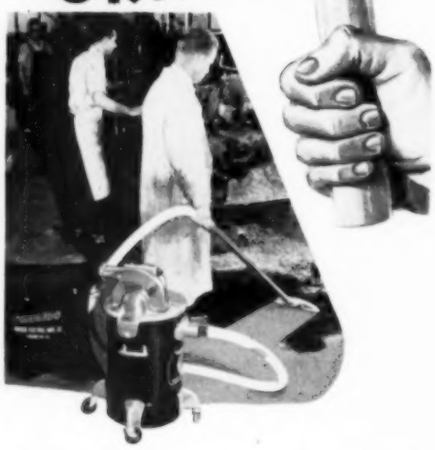
Free—For free folder of our complete line, just drop us a card today.

VARFLEX CORPORATION
306 N. Jay St.
Rome, N. Y.

BREVITY—Identify by IEN - 758 if you write the maker



Cut Dollars from Your Cleaning Costs with TORNADO®



Tornado reduces your cleaning costs in the face of other rising operating expenses.

Quick and thorough cleaning of plant or office interiors improves efficiency, reduces fire and accident hazards. Regular cleaning of machinery and fixtures adds years to their operating life.

All of your cleaning operations can be done with the Tornado vacuum cleaner. It's a 3 in 1 cleaner that serves as a:

Tank Type Cleaner—with a more powerful one stroke pickup of *water,* machine oil, metal chips, dirt and debris. Complete attachments for all types of cleaning.

Pack-Carried Vacuum Cleaner—just remove the motor unit from the top of the tank, connect Pac-Vac attachments, and you're ready to clean storage bins, stairways, overhead fixtures and hard-to-get-at places.

High Velocity Portable Blower—the same motor unit with a nozzle adaptor provides a powerful blast of dry air that cleans lint, dirt and oily fuzz out of electric motors, bearings, machinery and hard-to-reach areas.

Yes, you get all three—in one versatile Tornado Vacuum Cleaner. For detailed information write for bulletin 600.

BREUER ELECTRIC MFG. CO
5108 N. Ravenswood Avenue • Chicago 40, Illinois

▼ BREVITY—Identify by IEN - 760 if you write the maker ▼

FAST

KESTER FLUX-CORE SOLDER

FAST In Obtaining Wanted Results

Only Kester has the proven ability to give you the exact percentage of flux content needed for your particular soldering operations.

Free Technical Manual: Send for your copy of "SOLDER and Soldering Technique" today.

KESTER SOLDER COMPANY
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KESTER SOLDER

▼ BREVITY—Identify by IEN - 761 if you write the maker ▼

BONDED TO METAL LUBRICATION
***Increases* LINER LIFE**
For Class I Railroads

Electrofilm **Lube-Lok** increased life of Diesel liners, pistons and main thrust bearings 85,000 miles beyond normal service. Lube-Lok, because it actually locks to the part, assures maximum lubrication at all times under all conditions. Has excellent oil retention properties . . . operates at extreme low temperatures.

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Save & Improve **MAN HOURS AND CRITICAL MATERIALS QUALITY . . . with**

HYPREZ "OS" DIAMOND COMPOUNDS

Tungsten-carbide Valve and Steel Seal-Hyprez "OS" mirror-finished to perfect flatness.

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Hyprez "OS" Compounds produce finer, faster finishes—in either manual or production lapping.

"OS" is self-lubricating, absorbs more abraded material—has long-lasting cutting action.

"OS" diamond particles are precision graded, uniformly distributed, permanently suspended.

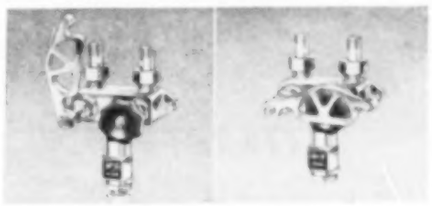
"OS", like "Type W", is available in color-identified 18 or 5 gram cartridges for use with Hyprez Applicator Gun; also in jars or collapsible tubes.

HYPREZ DIVISION
ENGIS EQUIPMENT CO.
431 S. DEARBORN ST. CHICAGO 5, ILL.

▼ BREVITY—Identify by IEN - 763 if you write the maker ▼

HEATING . . Hot water supply unit mixes steam and water, to 65 gpm.

Source: O'BRIEN STEAM SPECIALTY CO.
380 Heffernan Bldg., Syracuse 2, N. Y.



Water valve locks steam valve

Baby Cox, as shown in the illustration, and Junior Cox are water heaters initially developed some years ago in England. Now they are available through the company on the American market. The Baby unit is made with ½-in. connections. It rates 3.6 gpm. on 100-deg. temperature rise with 100-lb. steam. It is made with a chromium-plated bronze body, renewable disc valves, bronze screw-in seats.

The Junior size has connections ranging from ¾ to 2 in. in a range of capacities from 10 to 65 gpm. under the same steam conditions. It has an aluminum-painted bronze body with non-ferrous internal parts consisting of steam nozzle, mixing chamber and porcelain-ball packing, the latter to minimize noise from the mixing action of the water and steam.

Water enters through the connection to the left in the Baby Cox. Steam is connected at the right. The water-valve stem is fitted with an operating lever that rides as a shield over the steam-valve stem wheel so this wheel cannot be turned unless the water lever is lifted to a position that turns the water on. As a result there is no danger of scalding.

▼ BREVITY—Identify by IEN - 764 if you write the maker ▼

DRILLING . . Special machine mounts two centrifugal feed heads

Source: GOVRO-NELSON CO.
1933 Antoinette, Detroit 8, Mich.

Built to order

Drilling, counterboring, reaming are performed in a predetermined sequence by two of the company's Model-HH motor-driven centrifugal feed heads in this new special machine assembly. The heads are interlocked electrically and controlled at a push-button so one drills a No. 44 hole and counterbores No. 30 using a combination tool. Then it retracts and the second unit comes in from the opposite side to drill and ream a No. 38 hole in line with but a little off-center from the one on the opposite side.

The heads are motor driven and equipped with ball-type centrifugal mechanisms operating cone surfaces. When the motors are started the balls tend to roll outward moving the spindles axially for the feed operation. Heads are available with collet capacity to ¾ in. and can be supplied with lead screws for tapping as well as drilling.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 765 if you write the maker ▼

Electric Eraser

saves time safely!

Only this Bruning machine saves drafting time and gives you a 7 in. eraser that can't fly out, causing ferrule to damage drawing.

Stays cool under continuous operation. Rubber-mounted, permanently oiled bearings assure quiet, smooth operation. Lightweight, long-wearing—just one moving part.

Write for free folder. CHARLES BRUNING COMPANY, Inc., Dept. B12, 100 Reade St., New York 13, N. Y.

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***How to use* COMPRESSED AIR**

Compressed air provided by the correct type and size Quincy Compressor can be the solution to many production and manufacturing problems in your plant. Quincy Compressors provide air for blowing, spraying, starting, lifting, braking, driving, chucking, filling, and many more operations. Sizes range from 1 to 90 c.f.m. Write today for details on the complete line of Quincy Air Compressors. Quincy Compressor Co., Dept. H-25, Quincy, Illinois.

Quincy compressors

QUINCY COMPRESSOR CO.
Quincy, Illinois

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▼ BREVITY—Identify by IEN - 767 if you write the maker ▼

Cut Your Downtime *on mill roll changing* ***to 1 Minute or Less*** *with the* ***NEW B&S***

SHAFTLESS BACKSTAND

Money-consuming downtime on mill roll changing is cut to the bone by the wholly automatic B & S Shaftless Backstand. Here is what Mr. C. Carr Sherman, President of H. P. Smith Paper Co., has to say about this equipment:

"The engineering of this new unit indicates a fine understanding of the problems of the users of this type of equipment. The Backstand is much easier to handle as there are no shafts. It is also much easier and faster to make changes on it. I believe that changing rolls with this Backstand can be brought down to well under one half minute."

You may purchase the B & S Shaftless Backstand with or without the new B & S Slitter and Rewinder. The Backstand may be used on any type of rewinding equipment, as well as on waxing and laminating machinery, printing presses, etc.

For full details on the Shaftless Backstand and the new B & S Slitters and Rewinders, write to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N. Y.

THE B & S
#55 SHAFTLESS BACKSTAND
features automatic tension and side register control; motor for raising and lowering mill roll arms, also motor for moving the arms to accommodate different width rolls. Entire working mechanism is totally enclosed.

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WATERTOWN, NEW YORK

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SINCE 1852

500 FIFTH AVE., NEW YORK 18, N. Y.

Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Avenue, New York 20, N. Y.

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CUT DRYING TIME IN HALF with

NALCO INFRA-RED LAMPS

Industry-proved Nalco Lamps are cutting hours from production-drying time for scores of big-name users. Long-lasting carbon filaments provide greater penetration . . . less glare . . . fewer burn-outs.

SAVE MONEY, SPACE TOO! Nalco Lamps keep parts moving faster—save hours and dollars . . . eliminate expensive storage space. Available in inside aluminumed or clear glass types. FREE Bulletin, "Drying Problems Made Easy," upon request.

PILOT LAMPS
Carbon Filament—(3-12)b. Superior to fungites on machines that vibrate. Variety of sizes.

NALCO INFRA RED ORITHERM

NORTH AMERICAN Electric Lamp Co.

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LOCALITES
for Better Light ON the Job

Directs Light Exactly Where Needed as Easily as Pointing Your Finger

Designed Especially for Machine Tools, and Work on Assembly and Inspection Benches

MODEL 3267-H-174
Overall length 32¾". Three instantly adjustable joints. Flat oblong base for machine screw mounting.
$6.12 EACH in pkg. of 6
Single Units $7.65 ea.

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- Wired Complete with switch socket and 8 ft. oil resistant cord

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Localites are available through selected distributors worldwide

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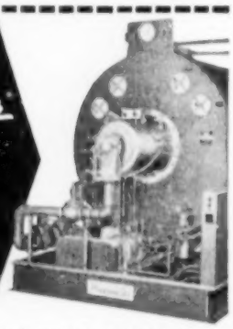

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NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

BOILERS . . "Steam-Pak" unit-type steam generator, 525 to 8,625 lb. steam per hr. in 15 models; two-page color-coded cut-away view, construction highlights, capacity table. Bulletin ID-51-115, 14 pages. York-Shipley Inc., 18 Jessup Pl., York, Pa. **IEN-01**

BRAZING . . "Braze-Clad" base-metal strip and sheet with a clad surface of silver brazing alloy; properties, picture examples of use, performance, test results. Bulletin BC-51, 4 pages. American Silver Co., 36-09 Prince St., Flushing 54, N. Y. **IEN-02**

BROACHING . . Series-HS horizontal broaching machines, 6 to 15 ton capacity; design and construction features, dimensional drawings and tables, specifications. Bulletin HS-51, 4 pages. Colonial Broach Co., Box 37-A, Harper Sta., Detroit 13, Mich. **IEN-03**

BURNERS . . "Hev-E" gas and combination oil-gas burners for 16 to 199-hp. boilers; construction features, notes on method of changeover, ratings on five models. Folder AD-101, 4 pages. Cleaver-Brooks Co., 324-28 E. Keefe Ave., Milwaukee 12, Wis. **IEN-04**

BURRING . . Steel and carbide burrs, small milling cutters, countersinks, shaped cutters; captioned illustrations to show scope of available line. Chart, "Cutting Tools," 14 by 24 inches. Severance Tool Industries, 740 Iowa St., Saginaw, Mich. **IEN-05**

CARBON PARTS . . Also graphite parts; data on pipe, valves, fittings, heat exchangers, pumps, brick, electrodes, brushes, contacts, anodes. Catalog S-5005, 20 pages. National Carbon Co., 30 E. 42nd St., Room 308, New York 17, N. Y. **IEN-06**

CASTINGS . . Centrifugally-cast products; notes on the company's service, analyses and properties on two bronze alloys, size limits, suggested uses. "Announcing a New Name . . ," 4 pages. Sorensen Industries, 51 Thomas St., Darby, Pa. **IEN-07**

CHAIN . . "Baldwin-Rex" double-pitch roller chain and sprockets; hp. selection chart, recommended working loads, dimensional drawings and tables, attachments. Bulletin 51-2, 12 pages. Chain Belt Co., 1675 W. Bruce St., Milwaukee 4, Wis. **IEN-08**

CHUCKS . . "Pitch line control" custom-built gear chucks for machine-tool and inspection use; general features, notes on engineering, illustrated setups. Bulletin 1228, 8 pages. Garrison Machine Works Inc., 513-17 Bannock St., Dayton 4, Ohio **IEN-09**

CLEANING . . Steam cleaning machines, steam generators, cleaning materials, also engine dynamometers; review of the company's personnel, plant, products. Booklet C-332, "20 years," 16 pages. Clayton Mfg. Co., P. O. Box 550-A, El Monte, Calif. **IEN-010**

CLEANING . . "Rotoblast" room-type blast-cleaning equipment; review of distinguishing features, illustrated operating description, drawings of suggested arrangements. Bulletin 222, 4 pages. Pangborn Corp., 230 Pangborn Blvd., Hagerstown, Md. **IEN-011**

CLEANING . . Portable blast cleaning equipment with dustless vacuum pickup built into its application head; cut-away views of head and equipment, application pictures. Bulletin 2180, 24 pages. Vaco-Blast Co., 348-52 Peninsular Ave., San Mateo, Calif. **IEN-012**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 772 if you write the maker ▼

A PAID NEWS ADVERTISEMENT BY S. B. BEUGLER

MARK-A-ZONE
Stripes Like Magic

As shown
3½ width
$98.50 Prepaid

Starts & Stops painting instantly. Easy to operate, any good handy man can do expert striping in a short while. Is really fun to handle. Stripes are just right thickness not to bleed through oils, or asphalt. It is not unusual for Mark-A-Zone stripes to last two years on open parking lots or streets. Comes as complete kit, chalk and line with layout instructions. All parts made for long life over any surfaces. Quality and performance both guaranteed. With your Mark-A-Zone cost per ft. 2c.

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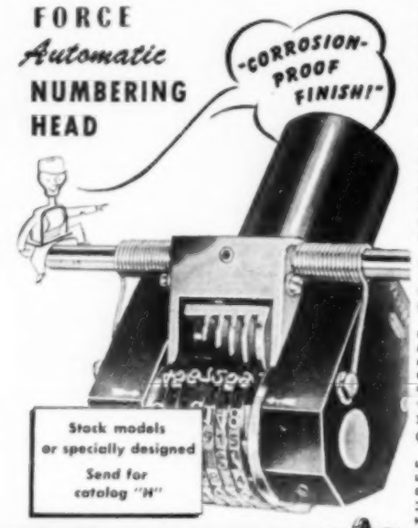
FORCE Automatic NUMBERING HEAD

"CORROSION-PROOF FINISH!"



Stock models or specially designed
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Agitators or blowers, conveyors or elevators, printing presses or pumps — it's all the same no matter what you make. When power transmission fails, your whole machine or equipment gets blamed. It's *your* reputation as the primary equipment builder that suffers the loss.

As a safeguard, increasing numbers of design engineers are specifying Winsmith Speed Reducers. They know by reputation and experience that Winsmith can be depended upon . . . that each of their machines so equipped leaves their plant with power transmission unexcelled. They know also, that the Winsmith nameplate is a positive selling point — a mark of merit that has industry-wide recognition for top quality engineering and fabrication.

In selecting a speed reducer within the 1/100 to 85 h.p. range for *your* machines or equipment, profit from the experience of others. Select the one that is on the approved list of the world's most highly regarded companies — Winsmith.

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WINSMITH, Inc.
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For Pressure Loads from 5 lbs. to 40,000 lbs.

In Sizes from ¼" to 24"

SAFETY HEADS

for Instant, Unrestricted

RELIEF

Bland, Corrosive, Viscous or Fluid Liquids • Vapors • Gases • Air

Affording the fastest, most complete relief of over-pressure, BS&B Safety Heads can be used both as primary or secondary relief devices on your pressure vessels or lines. Designed to rupture within ± 5 lbs. of pre-determined pressure, Safety Heads are precision made for specific applications, in various metals and sizes.

BS&B SAFETY HEADS — BLACK, SIVALLS & BRYSON, INC.

SAFETY HEAD DIVISION, DEPT. 2-LI
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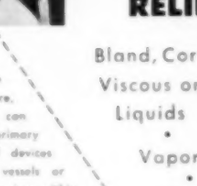

32 Bonnets
14 Diaphram Materials
49 Body Materials

No matter how specialized your problem of valving corrosive and/or hazardous substances, slurries, viscous liquids, gases, fermentation products, materials subject to coagulation, foods or beverages, the chances are that Hills-McCanna can furnish the proper valve to meet your needs. Write, today, for full information and descriptive literature, HILLS-McCANNA CO., 2347 W. Nelson Street, Chicago 18, Illinois.

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Saunders patent diaphragm valves
Proportioning Pumps
Force-Feed Lubricators • Magnesium Alloy Castings

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2 NEW Sizes!
HOFFCO-VAC
Heavy-Duty, Portable
VACUUM CLEANERS

Bigger Capacity and Higher Vacuum for Cleaning Larger Areas of Walls, Floors and Overhead Surfaces at Lower Cost!

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Operates 35-foot length of hose.

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Operates 50-foot length of hose.

AIR APPLIANCE DIVISION
U.S. HOFFMAN MACHINERY CORPORATION
103 Fourth Ave., New York 3, N. Y.
Canadian Plant: Canadian Hoffman, Newmarket, Ont.

NEW LITERATURE—Continued

CLUTCHES . . "Maultorq" floating-disc clutches, ¼ to 15 hp. at 100 rpm. In eight sizes; sectional drawings, descriptions on standard models, modifications, uses. Data Book 51, 24 pages. Carlyle Johnson Machine Co., Box 293, Manchester, Conn. IEN-013

COMMUNICATING . . Sound-powered telephones; details on handsets, stations and accessories for industrial, explosion-proof and office use, wiring diagrams. Catalog 400-B, 8 pages. United States Instrument Corp., 407-11 Broad St., Summit, N. J. IEN-014

CONDUIT FITTINGS . . For armored cable, leaded cable, flexible steel conduit, non-metallic-sheathed cable, service-entrance cable; designations by cable size. "Connector Size Chart," 11 by 8½ in. Thomas & Betts Co., 60-A Butler St., Elizabeth 1, N. J. IEN-015

CONNECTORS . . Illustrated step-by-step instructions for assembly of AN-"M" electrical connectors and wiring; cut-away view, contact data, tools. Bulletin SIM-1, 32 pages. Cannon Electric Mfg. Co., Box 75-A, Lincoln Heights Sta., Los Angeles 31, Calif. IEN-016

CONNECTORS . . Electric plugs and receptacles, standard and polarized; also lamp sockets, cord sets, trouble lamps, heating elements, insulators; sizes, weights, packaging. Catalog 51, 44 pages. Rodale Mfg. Co., 51 Thomas Blvd., Emmaus, Pa. IEN-017

CONTROLS . . Thermostats, motor-operated valves, control motors for temperature control of space-heating equipment; specifications on the components, typical circuits. Catalog F-1753-3, 48 pages. Barber-Colman Co., 1312-16 Rock St., Rockford, Ill. IEN-018

CONTROLS . . "Nullmatic" pneumatic control instruments for process variables; sectional views on the company's line, schematic drawings to show typical installations. Bulletin 5011, 18 pages. Moore Products Co., Lycoming & H Sts., Phila. 36, Pa. IEN-019

CONTROLS . . Cabinet-type panels to mount instruments and auxiliary control equipment; general description, dimension drawings of standard cutouts, list prices. Bulletin P-U-2, 4 pages. Wheelco Instruments Co., 845-49 W. Harrison St., Chicago 7, Ill. IEN-020

CONVEYING . . Roller and other types to handle shells and ammunition, also washing machines to clean gun parts, shells; picture review. "Your Metal Rearmament Products," 8 pages. Alvey-Ferguson Co., 344 Disney St., Cincinnati 9, Ohio IEN-021

CONVEYING . . In-floor roller track and flat dollies to handle heavy loads such as large rolls of paper; drawings and details, turntables, uses. Catalog A-51, 12 pages. Engineering Products Co., 12-224 S. Michigan Ave., Chicago 8, Ill. IEN-022

CONVEYING . . "Airslide" pneumatic chute conveyor for dry fine material; operating principle, diagrams and description of arrangements possible, installations. Bulletin FH-2, 8 pages. Fuller Co., 2930 Fuller Bldg., Catasauqua, Pa. IEN-023

CONVEYING . . "Coalitoter" portable flight conveyor for bulk materials and packages; typical specifications on four models with application pictures. Catalog 496, 6 pages. Lake Shore Engineering Co., 51 Lake Shore Blvd., Iron Mountain, Mich. IEN-024

CONVEYING . . Roller units to handle lumber, brick and other building materials; descriptions, dimension drawings on standard types, load capacity. Folder. "Conveyors for Brick," 4 pages. Mathews Conveyor Co., 191 Tenth St., Ellwood City, Pa. IEN-025

CONVEYING . . "Ship Trimmer" to throw bulk material by centrifugal action inside a ship's hold in any required direction to 1,500 tph.; operating schematic, uses. Bulletin 951, 4 pages. Stephens-Adamson Mfg. Co., 231 Ridgeway, Aurora, Ill. IEN-026

CRANE . . Model-204 25-ton crane with crawler or truck mounting; load-radius diagram, details on controls and construction, notes on use as a ¾-yd. power shovel. Catalog K-816, 36 pages. Koehring Co., 3024-28 W. Concordia, Milwaukee 16, Wis. IEN-027

CUTTING . . Carbide-tipped tools for general purpose and use on steel; dimension drawings, size tables, list prices on a range of designs, suggestions on grinding. Bulletin 51-817, 8 pages. DoAll Co., 252-56 N. Laurel Ave., Des Plaines, Ill. IEN-028

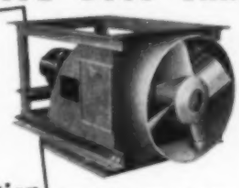
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 779 If you write the maker ▼

Wing

ELBOW TYPE DUCT FANS

Delivers Large Air Volumes with Low Power Consumption



Complete range of sizes from 10 in. to 60 in.; and from 200 to 85,000 c.f.m.

The Wingfoil Axial Flow Duct Fan, in either elbow type or straight line type, is a compact, economical fan designed to operate against static pressure. The elbow type replaces an elbow in a run of duct, with the motor outside the housing, unaffected by hot or dirty air or gases. Belt or direct drive. Wingfoil "Non-overloading" fan wheel characteristics. Write for bulletin.

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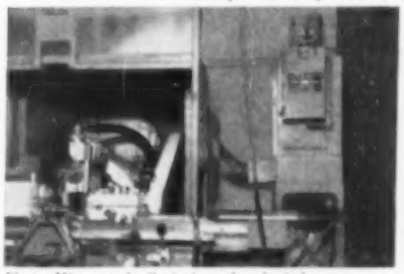

Electro-Mist controls oil mist from thread grinders Lear, Inc., Grand Rapids.

SAFETY INSURANCE
for high speed cutting and grinding

Electro-Mist eliminates coolant hazards from high speed cutting and grinding. This specially designed unit prevents dispersion of oil mist and smoke and collects both by electronic precipitation. Easy access to all parts . . . without tools. Salvages 2 to 5 gallons coolant daily. Now made in two sizes to meet any capacity requirement. Write today for Engineering Bulletin No. 251.

AAF American Air Filter COMPANY, INC.
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small size

Yarway Impulse Steam Trap is hardly larger than a pipe union. Easily installed *anywhere*. ½" trap weighs 3¼ lbs.; 2" trap only 8½ lbs. Over 650,000 Yarway traps have been *proved on the job*. Sold by over 200 distributors. For name of nearest one, or free bulletin, write . . .

YARNALL-WARING CO., 122 Mermaid Ave., Phila. 18, Pa.

YARWAY IMPULSE STEAM TRAP

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the amazing Crayons that tell temperatures

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WELDING
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IN GENERAL

it's this simple:
• Select the Tempilstik° for your working temperature.
• Mark your workpiece with it.
• The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

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125	225	325	500	700	1300	1700
136	230	338	550	750	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

$2 each

gives up to 2000 readings

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FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —14¼" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

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Custom-engineered to meet your specific requirements, Wissco Metal Processing Belts are furnished in standard or special mesh constructions . . . in conventional and spiral weaves . . . and with rod reinforcements for high-temperature service. Supplied in correct metal or special alloy for resistance to heat, abrasion and chemical action.

For specific information write or phone our nearest sales office.

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WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
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CF&I

▼ BREVITY—Identify by IEN - 784 if you write the maker ▲▼

• FOR SIGNS
• OBSTRUCTION MARKERS
• PLANT SAFETY LIGHTING

WESTON (automatic, plug-in type)
Illumination Control

The simplest, most efficient and economical plug-in control unit for automatically turning lights "on" and "off" at predetermined daylight levels. Employs only five rugged components—*no troublesome vacuum tubes, phototubes, resistors or capacitors* used. Draws current only during operating cycle (about one minute per day). One unit controls either one or two circuits of 3,000 watts each, at 120 volts a-c. Mounted in standard weatherproof watt-hour meter case. Return coupon for full details.

WESTON Instruments

WESTON Electrical Instrument Corporation
603 Frelinghuysen Avenue
Newark 5, New Jersey

Please send information on the new plug-in Illumination Control

NAME
COMPANY
ADDRESS

NEW LITERATURE—Continued

CUTTING . . Glass cutting tools, putty knives, paint wrapers, paint-can shaking machines, floor cleaning machines; condensed descriptions with application notes. Catalog 21, 96 pages. Red Devil Tools, 128-32 Cliff St., Irvington 11, N. J. **IEN-029**

CYLINDERS . . Air and hydraulic power cylinders; thirteen illustrated application examples to serve as suggestions for possible uses in your plant. Bulletin 152, 4 pages. Ledeen Mfg. Co., 1002 S. San Pedro St., Los Angeles 15, Calif. **IEN-030**

CYLINDERS . . Power cylinders for air, hydraulic, water operation; selection chart, dimensional drawings and tables, assembly instructions, semi-standard units. Bulletin 101, 28 pages. Orman-Miller Co., 1220 190th St., Hammond, Ind. **IEN-031**

CYLINDERS . . Hydraulic power cylinders to 1,500 lb. of oil pressure; illustrated review on design and construction, drawings and data on 7 mountings. Catalog 105, 12 pages. Rivett Lathe & Grinder Inc., 20-24 Riverview Rd., Brighton 35, Mass. **IEN-032**

DEFENSE PRODUCTION . . In pre-plated and prefinished metals; production scope, peacetime applications, wartime applications, detail breakdown on plant facilities. "Facilities Booklet," 8 pages. American Nickeloid Co., 49 Nickel St., Peru, Ill. **IEN-033**

DRIVES . . Power-transmission equipment for mining industry; Information on gears, speed reducers, flexible shaft couplings along with application pictures. Bulletin 10,014, 12 pages. Falk Corp., 3004 W. Canal St., Milwaukee 8, Wis. **IEN-034**

ELECTRONIC PRODUCTS . . Connectors, tools, hardware, fastenings, adhesives, chemicals and other products for electrical and electronic work; data and list prices. Catalog 155, 64 pages. General Cement Mfg. Co., 917-21 Taylor Ave., Rockford, Ill. **IEN-035**

ENGINES . . Small two-cycle gasoline engines; two-page captioned cut-away view to show internal construction features, notes on use in other products as a component. Booklet C-1, 8 pages. Power Products Corp., 49 Power St., Grafton, Wis. **IEN-036**

EXPANDED METAL . . How it is made, standard and flattened patterns, sizes and properties, available metals, illustrated uses as a product component and flooring. Catalog 403-EM, 28 pages. Penn Metal Co., 295 E. 42nd St., Rm. 1504, New York 17, N. Y. **IEN-037**

FABRICATING . . Contract service to fabricate steel and alloy plate as specified; description of shop and range, illustrated facilities and examples. Bulletin C-52, 8 pages. Colonial Iron Works Co., 17629-33 St. Clair Ave., Cleveland 10, Ohio **IEN-038**

FASTENINGS . . Wing nuts of corrosion-resistant zinc alloy; dimension charts on Senior and Junior types, size tables on units from 4-40 to 1/2-20 thread. "GRC Wing Nuts," 4 pages. Gries Reproducer Corp., 793 E. 133rd St., New York 54, N. Y. **IEN-039**

FASTENINGS . . "Everlasting" bolts, nuts, rivets, screws, washers in aluminum, brass, bronze, copper, Monel, stainless steel; size and list-price tables. "1951 Stock Book," 56 pages. H. M. Harper Co., 8202 Lehigh Road, Morton Grove, Ill. **IEN-040**

FASTENINGS . . Cold-headed metal parts for military applications; design suggestions, types made and operations involved, list of products by use, plants. Booklet TL-64, 12 pages. Townsend Co., 49 Industrial St., Dept. 116, New Brighton, Pa. **IEN-041**

FILTERING . . Air filter, originally developed for the Atomic Energy Commission to stop fine particles; description, performance, data on five models. Letterhead, "Absolute Filter," 4 pages. Cambridge Corp., 348-52 S. Geddes St., Syracuse 1, N. Y. **IEN-042**

FLOORS . . "Mulsomastic" resilient mastic surfacing for wood, brick or concrete floors; properties, illustrated examples of use, application steps, adaptations. Folder U-208-E, 4 pages. Tremco Mfg. Co., 5703 Kinsman Road, Cleveland 4, Ohio **IEN-043**

FOUNDRIES . . Jolt-squeeze-strip molding machines with 1,500 to 4,000-lb. jolt capacity on 80-lb. line pressure; general description, specification table on seven models. Bulletin 2000, 4 pages. SPO Inc., 6452 Grand Division Ave., Cleveland 25, Ohio **IEN-044**

All Makers of These And All Other Products Are Listed In THOMAS' R GISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 786 if you write the maker ▲▼

NEW THREAD COMPOUND
Licks Stud Freezing Even at 1800°F.!

SAFE for all high temperature applications!
SAFE for Stainless and Alloy Steels, too, will not pit or corrode!
IDEAL as a cutting compound to prevent galling of Stainless Steel!

Make a convincing test of Fel-Pro C-5 "Hi-Temp" Thread Compound at our expense. Then you can be sure that C-5 will do everything we say it will do. See how it cuts heater dismantling time—how it cuts costly stud breakage and eliminates pitting. Then you will standardize on C-5 just as have some of the nation's largest refineries, utilities and process industries. Write for FREE Sample and data sheet TODAY!

FREE TEST SAMPLE! Send for YOURS TODAY

FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

FELT PRODUCTS MFG. CO.
1523 CARROLL AVENUE • CHICAGO 7, ILLINOIS

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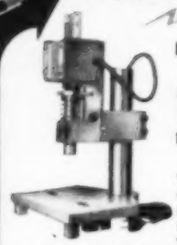
WIDELY USED TO
STAKE
MARK
SWAGE
CUT OFF
RIVET
CRIMP

LIGHTNING-FAST ELECTROPUNCH



PRODUCES UP TO 10,000 PIECES PER HR.

This versatile low cost electric impact hammer produces up to 10,000 pieces per hour using automatic switching — as high as 5,000 pieces per hour with hand or foot switching. Ideal for steel stamping, inspection or identification marks on small defense parts.

ELECTROPUNCH is portable — plugs into any 115 V A. C. outlet. Lightest model (illustrated) sells for only $90.75.

ELECTROPUNCH quickly pays for itself. Investigate its possible applications in your plant now!

Write for descriptive folder.

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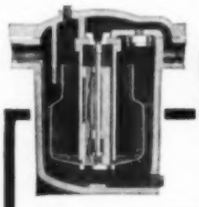

ILLINOIS STEAM TRAP

Simple—has only two moving parts

Valve Stem Travels Independent of Bucket—no other trap has this feature.

Instantaneous Valve Action—either wide open or tight shut—will not dribble on partial closing of valve under slow condensation rates.

Wire Drawing Impossible—valve has snap action.

Simple—moving parts are valve and bucket.

Cannot Air Bind—vents air continuously without loss of steam.

Cannot Blow Steam—always water sealed.

Surface Discharge—flushes out all grease and sludge.

Valve Seat—of special alloy, fully guaranteed.

Inspection Easy—without disturbing piping.

Works Equally Well on All Fluids—compressed air lines, air separators, air aftercoolers.

Write for Bulletin 35

Consult us on your requirements

ILLINOIS ENGINEERING COMPANY
INCORPORATED 1899
RACINE AVENUE AT 21ST STREET • CHICAGO 8

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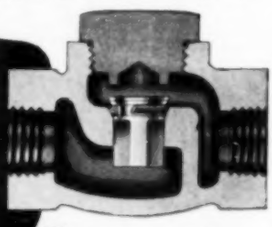
Viloco Check Valves



Designed to do a BETTER JOB . . .
BUBBLE TIGHT . . . NO LEAKS

- Neoprene "O" ring plunger seat.
- Remains tight after thousands of operations.
- Ideal for air lines in brake systems.
- Tested to 300 lbs. p. s. i. pressure.
- Made in ¼"—⅜"—½" sizes with or without bleed orifices.

VILOCO RAILWAY EQUIPMENT CO.
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RESPIRATORY PROTECTION

1 FACE PIECE—7 CARTRIDGES
(Quickly Interchangeable)

Protect against Dusts, Gases and Vapors

WITH THE AO R2000 RESPIRATOR

When many hazardous vapors, gases or dusts are a problem, you can simplify protection and save money by standardizing on the AO R2000 Respirator. Single, basic face piece accommodates 4 chemical cartridges of NON-SPARKING metal and three dust cartridges which, while light in weight for comfort, have maximum filtering capacity. CARTRIDGES INTERCHANGE WITH A TWIST OF THE WRIST — one twist removes outer cover, a second replaces it. Respirator may also be used with chemically treated disposable dust filter. Your nearest AO Safety Products Representative can supply you.

American Optical COMPANY
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

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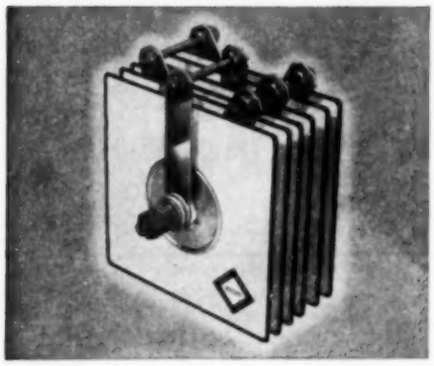
The NEW Belcon
BALANCED WATTAGE
SELENIUM RECTIFIERS

WILL MEET YOUR EXACTING REQUIREMENTS FOR MAGNETIC AMPLIFIER APPLICATIONS



● Selenium rectifiers for use in modern magnetic amplifiers, must have special rectifier characteristics in order to achieve the maximum results when used with the newer grain oriented toroidal cores.

Belcon Balanced Wattage Rectifiers are manufactured to have these special characteristics: They have a very much higher forward to reverse-current ratio — as high as fifteen hundred to one or better; they have a low forward-voltage drop — usually as low as 1.2 volts per cell.

Belcon also manufactures a complete line of Rectifiers for industrial applications as well as specialized Rectifiers to fit unusual applications. Such units are frequently smaller in size and therefore may cost less than the standard line due to the exclusive Belcon Balanced Wattage principle.

WHY BALANCED WATTAGE
Belcon employs a variable blocking voltage — current density ratio resulting in a balanced wattage rectifier. A Belcon Rectifier processed to block 40 volts rms, for example, will deliver 1 ampere; the same size rectifier processed to block but 20 volts rms will deliver 2 amperes or more.

BELCON RECTIFIERS
Division of Bogue Electric Manufacturing Company
40 IOWA AVENUE • PATERSON 3, N. J.

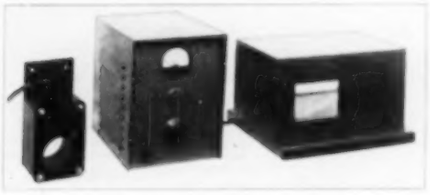
Bogue

MAGNETIC AMPLIFIERS
MAGNETIC CONTROLLERS
AC & DC MOTORS
AC & DC GENERATORS
VOLTAGE & SPEED REGULATORS
SWITCHBOARDS

▼ BREVITY—identify by IEN - 793 if you write the maker ▼

TESTING . . Electronic equipment detects metal in non-metallic materials

Source: RADIO CORP. OF AMERICA
1941 Front & Cooper Sts., Camden 2, N. J.



Metal particles actuate circuit

Guardsman Series trade names new design of the company's electronic metal detector, previously described IEN-5023-46. As in the initial design the equipment detects metallic particles in non-metallic materials such as food products, plastics, paper, rubber, tobacco, textiles, explosives, chemicals. The materials are carried through an inspection head on a non-metallic belt or in a non-metallic tube.

Metal particles contained in the material unbalance a high-frequency electro-magnetic field. This produces a signal that is amplified and employed to actuate a relay, sound a warning, operate a marking device or an ejection mechanism, stop further movement or produce a combination of actions.

The new design centers in the detecting head and provides a choice of four models, two rectangular and two circular with reference to the aperture. The two rectangular units provide work openings measuring 2½ by 7½ in. and 4 by 5 inches. The other two have circular openings 1¼ and 2 in. in diameter. Any one of the four heads operates with the control unit which measures 6¾ by 10 by 8¼ in. and weighs 20 pounds. Provision is made at this control unit to regulate sensitivity.

The inspection heads are sealed against entrance of dirt, lint, and moisture so they can be scrubbed or hosed whenever this is required. Operation is on 110-volt 50-60-cycle ac with input at 70 watts. Speed of the material moving through the detecting head can be as high as 1,000 fpm.

▼ BREVITY—identify by IEN - 794 if you write the maker ▼

HANDLING . . Engine service stand to manipulate fuel pumps, sub-assemblies

Source: R & G MFG. CO.
504-A Wysor Bldg., Muncie, Ind.

Handles and holds

All-Kleer is a new wheel-mounted stand with a drain-equipped pan-type base and a clamp-type head that can be rotated and locked in desired positions. The stand is designed to take various sub-assemblies from a diesel engine and position them for servicing.

Load capacity of the stand and its adaptors is 800 pounds. The clamp will take a head measuring 5½ to 12 in. in thickness. The pan on the base will hold 10 gal. of oil. Overall dimensions are 33 by 30 by 34 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—identify by IEN - 795 if you write the maker ▼

In ANY
ELECTRICAL
CHEMICAL
PHYSICAL
ELECTRONIC
Laboratory

Type 650-A Impedance Bridge $260.00

This self-contained, battery-operated, direct-reading and portable bridge is always set-up and ready for making almost all routine basic electrical measurements. It can be used on both d-c (with a zero-center galvanometer null indicator) and 1,000 cycle a-c hummer (built-in, for external headset balance). It measures:

Resistance *1 milliohm to 1 megohm*
Capacitance *1 micromicrofarad to 100 microfarads*
Inductance *1 microhenry to 100 henrys*
Dissipation Factor *(R/X) .002 to 1*
Storage Factor *(X/R or Q) .02 to 1000*

Thousands of these bridges are in use in laboratories all over the world. It has no equal for compactness, portability, sufficient accuracy for most routine measurements and general handiness.

Write for Complete Details

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 920 South Michigan Ave. CHICAGO 5
1000 North Seward St. LOS ANGELES 38

▼ BREVITY—identify by IEN - 796 if you write the maker ▼

Hammond OF KALAMAZOO
WIDE SWING *Grinders*

DESIGNED FOR CONTINUOUS HEAVY DUTY GRINDING . . .

WIDE SWING — up to 30" between wheels. NEVER-BLOG EXHAUST GUARDS — Plate Steel, not cast iron. HEAVY DUTY — Model WXS5 shown weighs 1140 lbs. net. FOR 12", 14" and 18" WHEELS — models with multi-V belt drive also available.

Hammond Machinery Builders
1607 DOUGLAS AVENUE • KALAMAZOO 54, MICHIGAN

▼ BREVITY—identify by IEN - 797 if you write the maker ▼

GET RID OF WIRES

and get foolproof connections in
RADIOS
AMPLIFIERS
SWITCHBOARDS
METERS

Print your circuits with Du Pont Conductive Coatings—reduce costs and time

Highly conductive coatings of low resistance are easily obtained by spray, brush, dip or stencil to metals and non-conductors. These coatings can be used to make economical, lightweight, compact high-voltage capacitors; static shields to replace usual cans and foils; resistors and solder seals. For more information, send for Bulletin CP 2-1248. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Del.

DU PONT ELECTROCHEMICALS

DU PONT

▼ BREVITY—identify by IEN - 798 if you write the maker ▼

Better FIRE PROTECTION BEGINS WITH ROCKWOOD PRODUCTS

Get the best all-around fire fighting tool available — Rockwood triple-action 5G-48 WaterFOG Nozzle. A truly all-purpose nozzle that extinguishes and controls fires in flammable liquids and ordinary combustibles with plain water. Protects operator from fumes and heat. Discharges high velocity WaterFOG, straight stream and low velocity WaterFOG. Available for service on fire hose lines in ¾" — 1" — 1½" and 2½" sizes. Approved by Underwriters' Laboratories, Inc., and Factory Mutual Laboratories.

Write for complete information and prices on Rockwood's growing family of portable fire fighting products.

ROCKWOOD SPRINKLER COMPANY
40 HARLOW STREET WORCESTER 3, MASS.

Portable Fire Protection Division . . .

BREVITY—Identify by IEN - 799 if you write the maker

CHALLENGE SURFACE PLATE EQUIPMENT

PRECISIONED FOR YOUR PRECISION NEEDS!

ANGLE PLATES Provide a practical and versatile method for clamping and holding work. Challenge plates are made of high grade, fine grained semi-steel—special heat treated and precision ground to an accuracy of .0005 inch. Made in 22 sizes, from 2½x6x12 inches up to and including 18x18x18 inches.

BOX PARALLELS. Special heat treated and precision ground to an accuracy of .0005 inch.

V-BLOCKS. Recommended for supporting shafts and other cylindrical work when drilling, checking, inspecting, etc. Made of fine-grained semi-steel castings. Special heat treated, precision ground. Ribbed sides.

RIGHT ANGLE IRONS. Made of fine grain special analysis semi-steel, specially treated. End and sides are precision ground both square and parallel.

STRAIGHT EDGES. Scientifically shaped and ribbed to retain accuracy. Made of special analysis semi-steel.

Write for complete information and prices. 684

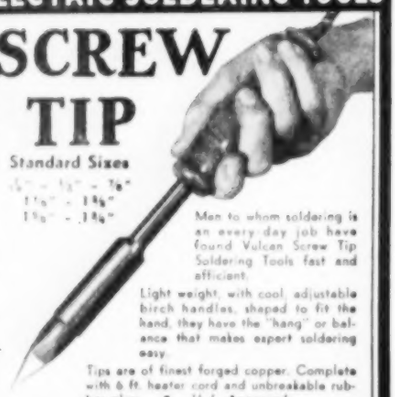
THE CHALLENGE MACHINERY CO.
GRAND HAVEN, MICHIGAN

BREVITY—Identify by IEN - 800 if you write the maker

VULCAN
ELECTRIC SOLDERING TOOLS

SCREW TIP

Standard Sizes
¼" - ½" - ⅞"
1⅛" - 1⅜"
1⅝" - 1⅞"



Men to whom soldering is an every-day job have found Vulcan Screw Tip Soldering Tools fast and efficient.

Light weight, with cool, adjustable birch handles, shaped to fit the hand, they have the "hang" or balance that makes expert soldering easy.

Tips are of finest forged copper. Complete with 6 ft. heater cord and unbreakable rubber plug. • U. L. Approved.

VULCAN ELECTRIC CO.
DANVERS 8, MASS.

Vulcan Electric Soldering Tools, Solder Pots, Glue Pots, Branding Irons. Vulcan Electric Heating Elements.

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BENDIX FRIEZ

Bendix-Friez THERMISTORS
(NEGATIVE TEMPERATURE CO-EFFICIENT CERAMIC RESISTORS)

• These temperature responsive resistors are useful as temperature measuring elements and as liquid level sensors; they are especially well suited to compensation where the circuit constants must be maintained irrespective of temperature changes. Since they are a fired ceramic, they are stable under practically all conditions and respond only to temperature changes.

Typical application in capsule form for temperature sensing of hydraulic oil.

Many other values can be obtained from standard diameter material. Because the thermistors are made in our own plant, under extremely careful control, special compositions, shapes, and resistance values, hermetically sealed or otherwise protected, can be made in any quantities to suit your individual requirements.

We invite your Inquiries Write Dept. H

BENDIX-FRIEZ STANDARD ROD TYPES

Size (inches)	@ + 30°C.	@ 0°C.	@ — 30°C.
.140 x ¼	45 ohms	88 ohms	193 ohms
.040 x 1.5	14,000 ohms	29,946 ohms	74,676 ohms
.018 x 1.5	40,000 ohms	94,040 ohms	262,400 ohms

FRIEZ INSTRUMENT DIVISION of
1334 Taylor Avenue • Baltimore 4, Maryland
Export Sales: Bendix International Division, 72 Fifth Ave., N.Y. 11, N.Y.
Bendix AVIATION CORPORATION

NEW LITERATURE—Continued

FURNITURE . . "Ajustrite" chairs and stools with automatic adjustment for height; data on a line formerly made by Kewaunee Mfg. Co., details on mechanism. Bulletin 51-4FF, 4 pages. Ajusto Equipment Co., 2142-46 Madison Ave., Toledo 2, Ohio IEN-045

GEAR CUTTING . . Single-spindle gear-hobbing machine; production figures, operating cycle, schematic layout diagrams, specification table, general description. Bulletin 1458-A, 4 pages. Michigan Tool Co., 7169-73 E. McNichols Rd., Detroit 12, Mich. IEN-046

GRINDING . . Twenty-five application examples of work performed on the company's flat surface disc grinding machines, ranging from axles to washers. Each example includes a line drawing of the part, figures on the amount of stock removed, tolerances, production rate, specifications on the machine. Some cover set-ups for two parallel surfaces at once. Catalog MM 9, 32 pages. Gardner Machine Co., 51 State Line Road, Beloit, Wis. IEN-047

GRINDING . . Machines for thread and precision form grinding; data sheets on individual models and specifications, description on construction and wheel dressing. Catalog TFG-13579-51, 22 pages. Sheffield Corp., 719-23 Springfield Ave., Dayton 1, Ohio IEN-048

GRINDING . . Mounted point wheels with removable spindles; notes on porcelain integral threaded insert, dimensional drawings, sizes, list prices. Bulletin ESA-66A, 4 pages. Simonds Abrasive Co., Fraley & Tacony Sts., Philadelphia 37, Pa. IEN-049

GRINDING . . Diamond wheels in resinoid and steel-bonded types, also hand hones; description, instructions on use, types, sizes, list prices. Catalog 851, letterhead request, 24 pages. Wickman Mfg. Co., 15581 Woodrow Wilson Ave., Detroit 3, Mich. IEN-050

HANDLING . . Fabricated-wire baskets, crates, trays, racks for material handling; standard units, notes on available custom fabrication service. Folder and data sheets. Allied Metal Specialties Inc., 516-18 N. Charles St., Baltimore 1, Md. IEN-051

HANDLING . . Wood pallets for lift-fork entry on all four sides; condensed information on three available types, pictures to show their range of applications. Folder, "4-Way Pallets," 4 pages. L & H Wood Mfg. Co., 33117-21 Grand River, Farmington, Mich. IEN-052

HARD FACING . . "Amscoating" welding rod and electrodes; two-page selection chart by application, recommended material, available size and type. Bulletin SG, 4 pages. American Manganese Steel Div., 388 E. 14th St., Chicago Heights, Ill. IEN-053

HEAT TREATING . . Atmosphere generators for heat-treating furnaces; data table on seven gas types with compositions, uses, equipment diagrams, approximate cost. Bulletin SC-155, 8 pages. Surface Combustion Corp., 2373-77 Dorr St., Toledo 1, Ohio IEN-054

HEAT TREATING . . "Monogas" furnace atmosphere generator; gas composition, two-page color-coded schematic flow diagram, operating description. Bulletin 28-825, 8 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pitts. 30, Pa IEN-055

HEATING . . Steam unit heaters, convectors, direct-fired heaters; condensed catalog information on a line of heating equipment with capacity tables, ratings, dimensions. Bulletin 29-G, 4 pages. Airtherm Mfg. Co., 752 S. Spring Ave., St. Louis 10, Mo. IEN-056

HEATING . . High-frequency heating equipment; illustrated review of dielectric and induction heaters, together with high-voltage power supply equipment. "XYZ of Electronics", 8 pages. Scientific Electric Co., 111 Monroe St., Garfield, N. J. IEN-057

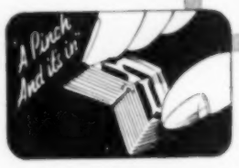
HEATING . . Series 2000 oil burners, available in a range of ratings from 50,000 to 350,000 btu. per hour; operating description, capacity chart on the line. Bulletin 100, 6 pages. Thermal Research & Engineering Corp., 31 Mill Road, Conshohocken, Pa. IEN-058

HEATING . . Revolving-type unit heater; air-distribution diagrams, smoke photographs to show distribution, design points, sizes and ratings, typical uses. Bulletin HR-6, 16 pages. L. J. Wing Mfg. Co., 156-62 Vreeland Mills Rd., Linden, N. J. IEN-059

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 802 if you write the maker

NO DELAY!
. . . use PANNIER National Rubber Type & Holders



"pinch" the exclusive dove-tail winged flange type into matching holder slot and there it stays without springs, wires or pins until you remove it. It can't fall out or shake loose.

• You lose no time waiting for dies or inserts to mark rush jobs when you use Pannier National Interchangeable Rubber Type and Holders. You make your own set-ups as you need them. Just

Both type and holders are available for every mill and industrial need. Ask for Bulletin NT-2.

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THE PANNIER CORPORATION
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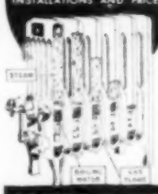
Pittsburgh 12, Pa.

BREVITY—Identify by IEN - 803 if you write the maker

SEND FOR COMPLETE INFORMATION, INCLUDING OPERATING PRINCIPLES, INSTALLATION DATA, TYPICAL INSTALLATIONS AND PRICES.



STEAM HEAT! WHERE YOU WANT IT! WHEN YOU WANT IT!

Why should your office employees suffer with the cold this winter—when it's so easy to keep them warm and comfortable with Clow Gasteam Radiators. Quick steam heat! Fingertip control! No hot water pipes, boiler or furnace room to rely on! Inexpensive, because you heat just the area where it's needed—not the whole plant.

Available for City, Butane or Propane Gas

JAMES B. CLOW & SONS
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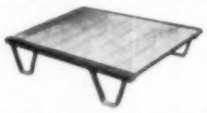
BREVITY—Identify by IEN - 804 if you write the maker

In production or in storage
IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid built to handle loads up to 3 tons

Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

Ironbound

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
30 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

BREVITY—Identify by IEN - 805 if you write the maker

Model 666-R

A Basic Tool

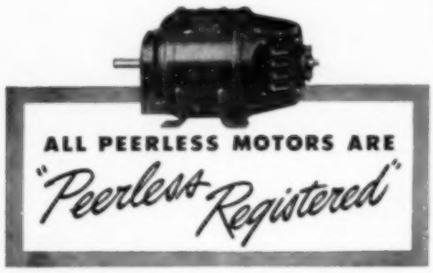
POCKET-SIZE VOLT-OHM-MILAMMETER With Self-Contained Resistance Ranges to 3 Megohms.

Note the wide ranges of this compact design. Note controls, flush with panel. Enclosed selector switch keeps dirt out, retains contact alignment permanently. Resistors, shunts, rectifiers housed in molded base integral with switch; no chance for shorts. Resistors are precision film or wire-wound types, each in its own compartment. Inside view shows details. Batteries easily replaced—positive grip coil assures permanent contact.

$26.50—AT YOUR DISTRIBUTOR
Prices Subject to Change

FOR THE MAN WHO TAKES PRIDE IN HIS WORK
Triplett
TRIPLETT ELECTRICAL INSTRUMENT CO. SANDUSKY, OHIO, U.S.A.

▼ BREVITY—Identify by IEN - 806 if you write the maker ▼



MORE than 90% of all Peerless Motors are custom manufactured to meet the specific operating requirements of the equipment with which they are to be used. So we "Peerless Register" every motor before shipment. The words "Peerless Registered" are a trademark, recorded in the U. S. Patent office. Only Peerless Motors can bear this phrase, and only Peerless Motors offer you this protection. This registration record is assurance to both you and your customer that the Peerless Motor has been properly designed for your equipment so as to give best possible performance and long, satisfactory service. And the registration record makes possible the quick identification of any Peerless Motor — anywhere.

THE PEERLESS ELECTRIC CO., WARREN, OHIO
Manufacturers of Quality Motors Since 1892
Single Phase • Polyphase • Direct Current • ¼ to 15 H.P.

Peerless-Electric MOTORS-FANS-BLOWERS

▼ BREVITY—Identify by IEN - 807 if you write the maker ▼

The Symbol of ROLLER CHAIN QUALITY— The DIAMOND

TRADE ◇ MARK

• The "Diamond" mark stamped on every link is more than a ready means of identifying Diamond Roller Chains. It is a symbol indicating unvarying quality of the product and the integrity of the maker.

For power transfer of every kind, this flexible uniformly-made Roller Chain assures smooth operation, high efficiency (98-99%) and positive insurance against slippage. Diamond Roller Chains operate equally well on short or long centers,—at low or high speeds,—and at small or very large horsepower capacities.

DIAMOND CHAIN COMPANY, Inc.
Dept. 465, 402 Kentucky Avenue, Indianapolis 7, Indiana
Offices and Distributors in All Principal Cities
Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

▼ BREVITY—Identify by IEN - 809 if you write the maker ▼

SAWING . . Circular blade, carbide tipped for precision slitting

Source: GAY-LEE CO.
69-73 W. 14-Mile Road, Clawson, Mich.

A Thinsaw blade

Thickness starts at 0.030 in. for this new carbide-tipped Thinsaw circular blade. Dimension tolerances are held within 0.0002 inch. The blade is available in diameters to 5 inches. The carbide tips are assembled by brazing in a circular seat for which patent has been applied. Deep cuts can be made without run-out. Blades can be lined up side by side for close multiple cutting as in the type-bar segments of a business machine.

▼ BREVITY—Identify by IEN - 810 if you write the maker ▼

EXTRUDING . . Multi-screw machine particularly handles plastic materials

Source: F. J. STOKES MACHINE CO.
5956 Tabor Road, Philadelphia 20, Pa.

65 to 200 pounds per hour

Three models have been added to the company's line of Stokes-Windsor extruding machines, two with twin screws and one with triple screws. Each assembly is characterized by its ability to exert positive constant pressure on the plastic material fed to the barrel and forced through the die. The result is work of uniform thickness and close tolerances even though a product is being manufactured in which adjacent sections are different widths.

Tapes, sheets, belting, flexible and rigid tubing, channels, weatherstripping are typical products. The machine can be employed also for compounding, coloring, pelletizing. Clear polystyrene plastic can be mixed with dies or pigments, fed through the twin-screw machine and cut or chopped to make colored granules ready for injection molding or for re-extrusion as finished products.

▼ BREVITY—Identify by IEN - 811 if you write the maker ▼

SPRINGS . . Stock assortment of coil compression units, 15, 30 sizes

Source: REID TOOL SUPPLY CO.
707-11 Baker St., Muskegon Heights, Mich.

For you to stock

The company offers two new assortments of coil compression springs made of music wire. Diameters are 3/32 to 1/2 inch. Length is 10 inches. One assortment consists of 30 springs including two each of 15 sizes. The other assortment contains 60 springs, two each of 30 sizes. Replacement springs can be supplied as required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 812 if you write the maker ▼

FAIRBANKS-MORSE GENERATING SETS

Many things can cause power failure — fires, explosions, traffic accidents, human error. And all of them can lead to injuries, property damage — even death. Then may come lawsuits and staggering debts.

Your own business is not immune. But the severity of the disaster can be minimized if you have a Fairbanks-Morse Generating Set standing by to cut in instantly when city or rural high line service is halted.

A Fairbanks-Morse Generating Set is the cheapest insurance you can buy! Ask your local Fairbanks-Morse dealer to show you why. Or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

▼ BREVITY—Identify by IEN - 813 if you write the maker ▼

What Answers Can You Come Up With?
by Utilizing FULLERGRIPT

GRINDER SHROUD devised from Fullergript brush strip by maker of vertical die and surface grinder . . . concentrates coolant and protects operator from spray.

REMOVING GLOSS from molded counter top accomplished by buffing cylinder with widely-spaced but spiralled Fullergript brush strips. Engineering trick was to work out angle of spiral giving an even buff.

NEW ANSWERS to puzzling problems can often be found with the brushing action of Fullergript strips. You are introduced to new vistas of mechanical possibilities. And our engineers will work with you. Simply write and ask for information from .

FULLER-BRUSH (At home . . in business, too)
FULLERGRIPT
THE FULLER BRUSH COMPANY
INDUSTRIAL DIV., 3583 MAIN ST., HARTFORD 2, CONN.

▼ BREVITY—Identify by IEN - 814 if you write the maker ▼

Let this all-purpose
DEWALT
save money in *Your* plant

Here is the ideal, all-purpose machine you need to cut costs and step up production in your plant. DeWalt is *many* machines in one! It dadoes, routs, shapes, tenons, grinds, sands, etc.! It's fast, accurate, safe, dependable. It takes up little floor space — and streamlines all your cutting operations. Write for catalog. DeWalt, Inc., Dept. IE-1 Fountain Ave., Lancaster, Penna.

DEWALT INC.
A subsidiary of American Machine and Foundry Co.

▼ BREVITY—Identify by IEN - 815 if you write the maker ▼

INTERNATIONAL STAPLE & MACHINE CO.
HERRIN 5, ILLINOIS
DISTRIBUTORS IN PRINCIPAL CITIES

"Our investment in INTERNATIONAL RETRACTABLE ANVIL STAPLE MACHINES is one of the best we ever made!"

So says Mr. Lin W. Bowling, President of Lindy's Industries, Los Angeles, California, one of the country's leading auto accessories manufacturers. The diversified sizes of Lindy's cartons make our equipment a "natural" for them.

Above you see their *filled* cartons being Stapled *from the outside* by means of our Model HAS-HPA4LP. Over 30 other models available — one a "natural" for you!

BREVITY—Identify by IEN-816 if you write the maker

Save 68% OF DOCK HANDLING TIME* with MOTO-TRUCS

A "twist of the wrist" does it.

*"A U.S. Navy Materials Handling Laboratory estimates that mechanized handling can cut 68% of the man hours needed for loading freight cars."
One user of 8 Moto-Truc Pallets cut the man hours unloading a boxcar from 16 to 4. Viz:—One man 4 hrs., formerly 2 men 8 hrs.

SEND FOR Bul. No. 51

THE MOTO-TRUC CO.
1953 E. 59th ST., CLEVELAND 3, OHIO
PALLET, PLATFORM AND HI-LIFT TRUCKS

BREVITY—Identify by IEN-817 if you write the maker

NOW!

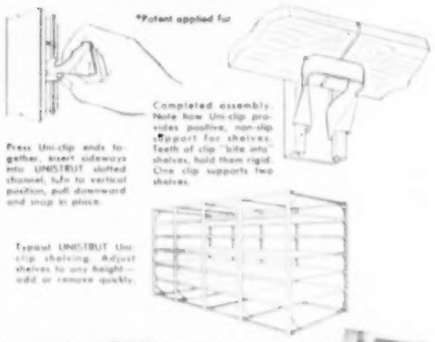
Get Lower Cost, More Adjustable SHELVING with UNI-CLIP*

A NEW SHELVING SUPPORT FOR USE WITH UNISTRUT® CHANNEL AND FITTINGS

Saves Time! Saves Money!

• Erect It Yourself—without special tools • Adjust Shelves to any Height • Add or Remove Shelves in Minutes • Quickly Dismounted, Moved and Re-erected • Easily Converted to Bulk Storage Rack

*Patent applied for



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Chicago 7, Illinois Dept. D1

Please send Free Uni-clip Bulletin UC-1

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Company.....
Address.....
City..... Zone..... State.....

NEW LITERATURE—Continued

INDEXING . . Geneva movement drives on which to base indexing mechanisms: dimensional drawings and tables on four, five, six and eight-point units, geared unit. Folder, 4 pages. Geneva Machine & Tool Corp., 409-404 Eilamar Ave., Tampa 2, Fla. IEN-060

LATHE ATTACHMENTS . . Tool-post turret with 12-position indexing; description and list prices on three models, also collet-closing attachments. "Tool Post Turret," 4 pages. Crusher Machine Tool Co., 652-56 N. Prairie Ave., Hawthorne, Calif. IEN-061

LATHE ATTACHMENTS . . Collets, steadyrests, chucks, tool bits, faceplates, layout equipment; catalog data on these and others for drill presses, shapers. Catalog 5102, 56 pages. South Bend Lathe Works, 301 E. Madison St., South Bend 22, Ind. IEN-062

LIGHTING . . Incandescent, fluorescent, mercury fixtures; descriptions, illumination distribution diagrams, mounting data, special application units. "1953 Datalog", 64 pages. Holophane Co., 342 Madison Ave., Room 719, New York 17, N. Y. IEN-063

LIGHTING . . Commercial fluorescent fixtures; illustrated models, illumination distribution diagrams, dimensions and ratings, suggestions on mounting. Catalog 631, 28 pages. Mitchell Mfg. Co., 2523-27 N. Clybourn Ave., Chicago 14, Ill. IEN-064

LIGHTING . . "Smitheraft" fluorescent fixtures; illustrated specifications, dimensional drawings and tables, parts lists, illumination information, list prices. Catalog L-213, 16 pages. A. L. Smith Iron Co., 219-231 Everett Ave., Chelsea 50, Mass. IEN-065

LUBRICATING . . "Antisep" sulphur-content cutting oil concentrate; collection of user reports with performance figures on a variety of operations. "Getting Down to Cases", 32 pages. E. F. Houghton & Co., 301-5 W. Lehigh Ave., Philadelphia 33, Pa. IEN-066

METERS . . Announcement of a calibration service for industrial flow-rate meters; illustrated details on scope, equipment and methods employed in the operation. Catalog 100, 8 pages. Fischer & Porter Co., 5060 County Line Road, Hatboro, Pa. IEN-067

MILLING . . Vertical milling and profiling machines; illustrated construction details, with catalog description; typical parts specifications, intended service. Bulletin 542, 12 pages. Pratt & Whitney, 49 Charter Oak Blvd., West Hartford 1, Conn. IEN-068

MOTOR CONTROL . . Types RAS and RAR multi-speed and reversing motor starters for across-the-line service, 1 to 100 hp.; tables of specifications. Bulletin RAS-RAR, 8 pages. Arrow-Hart & Hegeman Electric Co., 103-5 Hawthorn, Hartford 6, Conn. IEN-069

MOTORS . . Type AFZ enclosed fan-cooled motors, ½ to 100 hp.; illustrated construction to point out arrangement of the cooling fan, drawing and table of dimensions. Bulletin 51 B 7225, 6 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. IEN-070

MOTORS . . Single and polyphase electric motors, 1/20 to 5 hp.; tables of ratings, speeds, frame sizes, model designations, list prices, and dimensioned drawings. Catalog, 8 pages. Triad Engineering Corp., 448-52 E. Ohio St., Chicago 11, Ill. IEN-071

OIL CONDITIONING . . Equipment to purify electrical insulating oils in transformers and other equipment; description on operations performed, application stories. Two "Purivac" folders, 4 pages each. Honan-Crane Corp., 510 Indianapolis Ave., Lebanon, Ind. IEN-072

PACKAGING . . Papers and tapes for product wrapping, also a spiral wrapping machine; illustrated review of available products including VPI rustproofing papers. "Wrapping It Up . . ", 16 pages. Angier Corp., 58-62 Widell St., Framingham, Mass. IEN-073

PACKAGING . . Silica gel for dehydrated product packaging; properties of the drying agent, how to estimate required quantity, examples of use. Folder, "Silica Gel," 6 pages. Eagle Chemical Co., 1821-25 W. Carroll Ave., Chicago 12, Ill. IEN-074

PACKAGING . . Machines for forming cartons, also for lining, folding them; assembly of data summaries by models, together with specifications for each. "The Peters Way", 8 pages. Peters Machinery Co., 4702 Ravenswood Ave., Chicago 40, Ill. IEN-075

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-819 if you write the maker

SHENANGO Centrifugal CASTINGS ... KEY TO SAVINGS

Teamed up for longer life under pressure

SHENANGO CENTRIFUGAL CASTINGS OF MEEHANITE METAL

FIRST, Shenango's centrifugal process means a uniform, high-strength, pressure-dense casting, free from sand inclusions, blow holes and other defects. Next, in Meehanite Metal you have finer graphite flakes, always more evenly dispersed, thus avoiding stress concentrations and permitting a finer finish.

So here's a combination you just can't beat for wear-life . . . for resistance to abrasion, pressure or shock . . . for long-range economy!

If your plans call for essentially symmetrical parts, large or small, rough, semi- or finish-machined, check with Shenango. Get *all* the facts! Informative bulletins are yours for the asking.

SHENANGO-PENN MOLD COMPANY
Dover, Ohio
Executive Office: Pittsburgh, Pa.

SHENANGO
ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE® METAL

BREVITY—Identify by IEN-820 if you write the maker

IT'S NEW...
REQUEST YOUR COPY TODAY!
IT'S BARNES
HANDBOOK OF METAL SAWING!

Barnes new Handbook of Metal Sawing is a simplified, profusely illustrated booklet with 38 pages devoted to Hand Hack Saws, Power Hack Saws and Band Saws . . . for those of you who must train personnel quickly, it is invaluable. It is packed with facts and figures, tables and charts all based on actual production experience and compiled by experts. Write Barnes for your copy today.

W. O. BARNES CO., INC.
Dept. E, 1297 Terminal Ave., Detroit 14, Mich.

BREVITY—Identify by IEN-821 if you write the maker

232 DISTRIBUTORS and SERVICE SHOPS from COAST to COAST

NOW ON HAND
Integral Horsepower Electric Motors — conforming strictly to NEMA SPECIFICATIONS
3/4 to 200 hp.
1 phase and 3 phase
FULLY GUARANTEED
MOTORS EXCEEDING 200 HP BUILT TO ORDER

Today, world-famous ACEC electric motors are not only *immediately available* to American customers from warehouses in the United States, but ACEC SERVICE is available from Maine to California, from Washington to Florida.

232 DISTRIBUTORS AND MOTOR SERVICE SHOPS, throughout the nation, are fulfilling the service requirements of ACEC customers promptly and efficiently.

Whatever your electric motor requirements, write, wire, or telephone the nearest ACEC office or representative

IMMEDIATE DELIVERY from NEW YORK • CHICAGO • KANSAS CITY
NEW ORLEANS • DALLAS and LOS ANGELES Warehouses

BELGIAN ELECTRIC SALES CORPORATION
Main Office: ONE E. 53RD ST., NEW YORK 22, N. Y. • PLAZA 8-1115
BRANCHES AND AGENCIES: Los Angeles • San Francisco • Chicago • Kansas City • Cleveland • Dallas • New Orleans • Pittsburgh • Louisville • Washington, D. C. • Youngstown • Savannah • Montreal • Puerto Rico • Mexico City

BREVITY—Identify by IEN-822 if you write the maker

WILSON'S CLOCK-TYPE and FLAT SPRINGS

For years our entire production of clock-type springs has been used in products of our own manufacture. Now — by increased facilities — we have capacity to produce springs for other users requiring critical dimensions. We endeavor to use the finest quality steel in our springs. Exceptionally close tolerances and rigid specifications are made practical by our ELECTRONIC METHOD OF ANNEALING. We can supply springs either flat, formed, coiled or perforated. Whether you make instruments, gauges, timers or any other spring using device, it will pay you to submit drawings and specifications to Wilson's for a quotation.

We are also skilled in the making of small stampings, the assembly of small parts, wiring assemblies, and the annealing, tempering and hardening of small parts by induction heating.

WILSON'S OF CLEVELAND
425 Lakeside Ave., N. W.
CLEVELAND 13, OHIO

▼ BREVITY—Identify by IEN - 823 if you write the maker ▼

BETTER POWER TRANSMISSION

Whenever you require a reduction in speed between any prime mover and a driven machine, there is a Foote Bros. drive exactly suited to your needs.

The Foote Bros. line includes horizontal and vertical drives in either helical gear or worm gear types. Also available are Foote Bros.-Louis Allis Gearmotors in single, double and triple reductions. Call your Foote Bros. representative or write for information.

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HGA { Horizontal Worm Drives / Vertical Worm Drives / Hytop Worm Drives
LPB Line-O-Power Straight Line Drives
MPB Maxi-Power Helical Drives
GMA Foote Bros.-Louis Allis Gearmotors

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Boulevard
Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

▼ BREVITY—Identify by IEN - 824 if you write the maker ▼

Mono-Cushions ®
cut the cost of bumps

MONO-CUSHIONS ARE EASY ON MAINTENANCE MEN—These big, burly cushion tires literally soak up jolts and shock, reducing maintenance as much as 40% on driving trains, steering assemblies, bearings, and all parts of the vehicle affected by shock and shock load.

Mono-Cushions are easy on loads, floors, and drivers, too. They cushion the ride both ways, reducing load breakage and floor wear. They ride beautifully, handle beautifully, keeping drivers comfortable and alert. Mono-Cushions are sure-footed, stable on the high lifts.

The leading manufacturers of materials handling vehicles use Monarch Tires as original equipment. The manufacturer of your vehicles can supply you, through his distributors, with Monarch Tires engineered for your application.

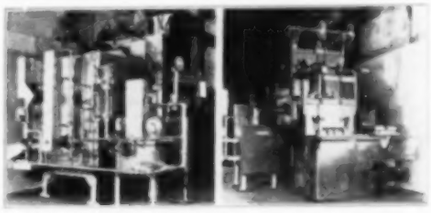
THE MONARCH RUBBER COMPANY
201 LINCOLN PARK • HARTVILLE, OHIO

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

▼ BREVITY—Identify by IEN - 826 if you write the maker ▼

HEAT TREATING . . Gas fired furnace for dry gas cyaniding on work batches

Source: INDUSTRIAL HEATING EQUIPMENT CO.
3568-72 Fremont Place, Detroit 7, Mich.



Work rides transfer car

Type CA-200 is a new gas-fired furnace capable of handling about 200 lb. per hr. of small work fed in batches in screen-bottom work boxes that rest on grid trays. The work is loaded at the front above a quench tank. It is entered through a vestibule door and moved from there into the main furnace chamber where gas-fired radiant tubes provide the required heat.

A motor-driven blower circulates gas from an atmosphere generator. It passes around the radiant tubes to transfer heat from the tubes to the work by convection and radiation. Following the required interval in the heating chamber, the work is brought out to the vestibule and lowered into the quench tank where a motor-driven propeller draws the oil down through the work for quick heat removal. The completed load is then removed and a new one put in its place.

The assembly is self-contained. It consists of the furnace, the quench tank and generator, combustion and generator-gas manifolds, the gas and electric controls. The equipment as supplied is ready for service connections in the user's plant.

▼ BREVITY—Identify by IEN - 827 if you write the maker ▼

GAGE . . Electronic manometer reads differential to 2 in. of water

Source: HASTINGS INSTRUMENT CO.
Pine Ave. & Super Highway, Hampton 10, Va.

It's highly sensitive

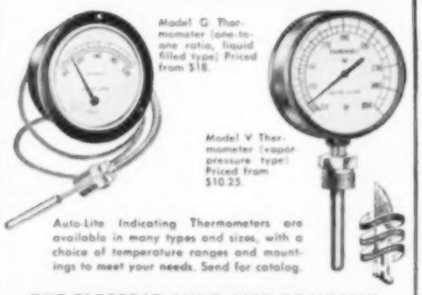
New assembly in the company's line of electronic equipment, previously described IEN 3683-50 as a vacuum gage, is now available to read pressure differential in a dual range between 0.001 and 0.1 in. and between 0.1 and 2 in. of water. The actuating element is a noble-metal thermopile and bridge circuit for operation on 110-volt ac. The assembly includes a pickup gage tube that is connected to the two points at which the pressure difference is to be measured. This tube can be installed permanently.

Accessories available with the instrument include a five-position switching attachment to monitor gage tubes in five locations with one indicating meter and a constant-voltage transformer for use where fluctuation on the input side might affect the reading on the meter dial.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 828 if you write the maker ▼

Depend on AUTO-LITE
FOR TEMPERATURE INDICATION



Model G Thermometer (one-to-one ratio, liquid filled type) Priced from $18.

Model V Thermometer (vapor pressure type) Priced from $10.25

Auto-Lite Indicating Thermometers are available in many types and sizes, with a choice of temperature ranges and mountings to meet your needs. Send for catalog.

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION • TOLEDO 1, OHIO
NEW YORK CHICAGO SARNIA, ONTARIO

AUTO-LITE
INDICATING & RECORDING THERMOMETERS

▼ BREVITY—Identify by IEN - 829 if you write the maker ▼

Gateway to Dependability

For electrical and general purpose jobs, Security gives you dependable, *added* protection. Tough, resilient, straight-tearing and non-raveling. No pinholes to cause leaks. See your wholesaler.

A Quality product of
UNITED STATES RUBBER COMPANY U.S. RUBBER
Tape Department, Rockefeller Center, New York 20, N. Y.

▼ BREVITY—Identify by IEN - 830 if you write the maker ▼

A case history based on the experience of the Hyster Company, Portland, Oregon

Intermediates that last like photographs
produced at low cost

By reproducing its engineering drawings on Kodagraph Autopositive Paper, Hyster gets intermediates which have dense black photographic lines on a translucent, durable paper base. *Intermediates* which will remain intact . . . and produce sharp, legible blueprints and direct-process prints whenever needed.

And the cost is surprisingly low because Autopositive boasts unique photographic properties. It can be handled in room light . . . and it produces positive copies *directly*—without a negative step. Also, it can be exposed in any blueprint or direct-process machine . . . and processed in standard photographic solutions. Hyster uses a blueprint machine which has also been designed to produce Autopositive intermediates in a continuous flow.

How The Hyster Company Uses Autopositive

For All Print Production. Autopositive intermediates are used instead of valuable and perishable original drawings . . . greatly reducing the possibility of reading errors in the shop.

For "Permanent" Files in its home office . . . and branches in the U.S. and abroad. With Autopositive intermediates there are no costly delays due to intermediates fading, turning yellow, or becoming brittle.

For Drafting Room Short Cuts. Autopositive Paper saves drafting time by reclaiming old drawings . . . and duplicating standard designs which will be included in new drawings.

Kodagraph Autopositive Paper
"The Big New Plus" in engineering drawing reproduction

Learn all the ways you can use Kodagraph Autopositive Paper, which you, or your local blueprinter, can process *quickly . . . economically . . . at low cost.*

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

▼ BREVITY—Identify by IEN - 832 If you write the maker ▲▼

New Free Booklet

Shows How to Select Proper Lubrication Equipment For Every Industrial Need

This profusely illustrated 48-page catalog tells how to simplify lubrication procedures, slash costs, increase production and profits. Packed with helpful facts about Alemite equipment for transferring, loading, and applying lubricants—plus information on ALEMITE FITTINGS and accessories. Write today for your free copy. Ask for Form 22-230. Alemite, Dept. K-12, 1850 Diversey Parkway, Chicago 14, Ill.

ALEMITE
MODERN LUBRICATION METHODS THAT CUT PRODUCTION COSTS

A PRODUCT OF SW INDUSTRIES

▼ BREVITY—Identify by IEN - 833 If you write the maker ▲▼

RAILS AND TRACK ACCESSORIES

Buy Rails and Track Accessories from a reliable single source—to save time and money. L. B. Foster's large warehousing operations provide dependable delivery of all your trackage needs—new installations or replacements. We'll meet your exact requirements. All material is rigidly inspected before shipment and is backed by Foster's Guarantee.

Write for Rails & Track Accessories Catalog IE-1

STEEL SHEET PILING • PIPE • WIRE ROPE

L.B. FOSTER CO.

PITTSBURGH 30, PA. NEW YORK 7, N.Y.
CHICAGO 4, ILL. HOUSTON 2, TEX.

▼ BREVITY—Identify by IEN - 834 If you write the maker ▲▼

WHAT'S *Your* HAT SIZE?

When you buy a hat, you buy it to fit. It makes as much sense to buy an annealed shot and grit that fits your blast cleaning problem EXACTLY. Permabrasive* shot and grit is the only metal abrasive made in three different hardness ranges, with a narrow range of hardness in each. This is possible, because Permabrasive is made from CONTROLLED RAW MATERIALS and because it is annealed UNIFORMLY, through a patented, continuous process.

To FULLY enjoy the savings advantages of annealed abrasives, get the story of Permabrasive*. A representative will cheerfully determine the exact hardness range to suit your requirements without obligation, of course. Write to your nearest Hickman, Williams office.

Permabrasive* Shot and Grit is produced exclusively by National Metal Abrasive Company • Cleveland, Ohio

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U. S. Application No. 619603

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NEW LITERATURE—Continued

PAINTING . . Rotogravure picture book to show about 100 applications of the company's spray equipment in production painting from automobiles to military tanks. Book, "Sprayways", 16 pages. De Vilbiss Co., 305 Phillips Ave., Toledo 1, Ohio IEN-076

PAINTING . . "Seseco" enamels and lacquers for wood and metal products, initially developed by the company for its own use, now offered to others; general review. Bulletin G-101, 4 pages. Sessions Clock Co., 50 Horton St., Forestville, Conn IEN-077

PIPE . . Of glass-lined steel for process use; sizes, types, construction features, also glass-lined fittings, valves, gaskets, packing rings, and application notes. Bulletin 806, 12 pages. Pfaudler Co., 1002 West Ave., Rochester 3, N. Y. IEN-078

PLASTICS . . "Farlite" laminated plastic sheet; properties, standard sizes, color pictures on 50 patterns, notes on available grades for special applications. Folder 1207, 4 pages. Farley & Loetscher Mfg. Co., White & 7th Sts., Dubuque, Iowa IEN-079

PRINTING . . "Copyflex" Model-20 machine to copy anything drawn, written, typed or printed on translucent paper, 46-in. width; operation, condensed specifications. Folder A-2009, 4 pages. Charles Bruning Co., 100 Reade St., First Floor, New York 13, N. Y. IEN-080

PROCESSING . . Vacuum-processing equipment including drying, freeze-drying, impregnation, metal coating units, pumps, gages; descriptions, data on standard sizes. Catalog 715, 12 pages. F. J. Stokes Machine Co., 5656 Tabor Rd., Philadelphia 20, Pa. IEN-081

PUMPS . . Plunger-type sludge pumps in simplex to quadruplex designs; selection charts, specifications, lubrication recommendations. Bulletin 5102, letterhead request, 16 pages. Ralph B. Carter Co., 222-26 Atlantic St., Hackensack, N. J. IEN-082

PUMPS . . Jet-operation, units including ejectors, eductors, exhausters, syphons; schematic drawing of principle, capacity and dimension tables, list prices, uses. Bulletin 512, 20 pages. Penberthy Injector Co., 1240-44 Holden Ave., Detroit 2, Mich. IEN-083

PUMPS . . Single and two-stage centrifugal pump for petroleum products; sectional drawings, construction details, dimensions on 1¼ to 8-in. units. Bulletin W-341-B2C, 12 pages. Worthington Pump & Machy. Corp., 423 Worthington, Harrison, N. J. IEN-084

PYROMETER SUPPLIES . . Standard and special thermocouples, components and installation accessories, selection data. Catalog 100-4, 44 pages. Brown Instruments Div., Minneapolis-Honeywell Regulator Co., 4456 Wayne Ave., Philadelphia 44, Pa. IEN-085

PYROMETER SUPPLIES . . Thermocouples in base and noble metals, protection tubes, insulators, extension wires; sizes, list prices, emf. tables, available controls. Catalog, 10 sheets. Compton Laboratories Inc., 20112-16 W. 8-Mile Rd., Detroit 19, Mich. IEN-086

REFRIGERATING . . Ammonia compressors; operating principle, two-page captioned cutaway view, controls, lubrication, dual-pressure units, data on standard machines. Bulletin 112-I, 16 pages. Frick Co., 320 Broadway, Waynesboro, Pa. IEN-087

RELAYS . . "Tarrytron" time-delay units; notes on calibration and sealing, illustrated types with data summaries on ratings and outline dimension drawings. Bulletin T-2, 12 pages. Diaphlex Div., Cook Electric Co., 2708 Southport Ave., Chicago 14, Ill. IEN-088

RESEARCH . . Available service for research into air or water pollution; illustrated facilities, examples of work, affiliated services. "Research in Air and Water Pollution," 8 pages. New York University College of Engineering, New York 53, N. Y. IEN-089

RUBBER PRODUCTS . . Made from natural and synthetic stocks; picture trip through the company's plant to show facilities and scope of its production service. "Roth Research . . ." 12 pages. Roth Rubber Co., 1856-62 S. 54th Ave., Chicago 50, Ill. IEN-090

SCREW DRIVING . . "Hy-Pro" Phillips-screw insert bits and holders; listings by power-tool make, list prices, also hand drivers, table of bit and screw sizes. "Phillips Bits," 4 pages. Continental Screw Co., 700 Mt. Pleasant, New Bedford, Mass. IEN-091

All Makers of Those And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

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locate and hold with **DE-STA-CO TOGGLE CLAMPS**

High holding pressures and precision construction of "De-Sta-Co" Toggle Clamps make this assembly fixture efficient. Locating pins welded to clamp bars locate channels for welding assemblies of varying lengths. Positive holding pressures, up to 4000 pounds in some models, hold parts in close contact essential for good production welding. The same principles apply to your drilling, machining, bonding, gluing or other production processes. Quick toggle action permits fast, safe loading and unloading of fixtures, uniform results, even by untrained workers.

Your nearby "De-Sta-Co" Distributor stocks more than 40 models for your convenience. Write for his name and your copy of new catalog issue.

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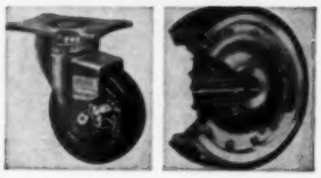

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- made in all sizes in both swivel and stationary types
- furnished with either semi-steel or rubber tread wheels
- assures maximum floor protection and reduces wear on equipment
- plus an appreciable increase in employee efficiency

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LONG BEACH, CALIFORNIA; 36 N. CLINTON, CHICAGO, ILL.

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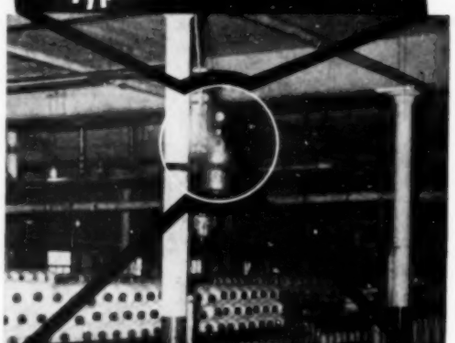
Question: What about Unit Type Steam Humidifiers?



Answer: Armstrong Unit Type Steam Humidifiers are ideal for overcoming wintertime dry air conditions for the following reasons:

- **Fully Automatic.**
- **Accurate Control**—within 1%—2% relative humidity
- **Clean**—no residue in the air
- **Quiet**—acoustically designed
- **No cooling effect**—raise room temperature a degree or two
- **Economical to operate**—pennies per day per unit—½ to ¼ the price of water spray equipment
- **Low in first cost**—approximately $182 complete for a unit to handle up to 40,000 cu. ft.
- **Easy to install anywhere**—hooked up to existing steam and electrical systems much like unit heaters
- **Dependable**—quality materials and workmanship
- **Guaranteed**—complete satisfaction or your money back. Write today.

ARMSTRONG MACHINE WORKS
888 Maple Street, Three Rivers, Mich.

For Full Details Send for BULLETIN 1773

Operating principles, capacities, sizes, prices, hookups, selection data and other useful information—all included in Bulletin 1773. Send for your copy today.

ARMSTRONG *Steam* HUMIDIFIERS
BUILT BY THE MAKERS OF ARMSTRONG STEAM TRAPS

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SAFER LONGER...

Surety's Sureseal Synthetic has 10 times higher abrasion resistance, 4 times higher snag resistance, much higher chemical resistance than either rubber or standard synthetics.

..SO THEY COST LESS

SURETY SURESEAL SYNTHETIC RUBBER GLOVES

THE SURETY RUBBER CO. Dept. I CARROLLTON, OHIO

IN CANADA: Safety Supply Co., Toronto, Ont.

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Will Plastics Work For You?

FAST...DEPENDABLE SOURCE OF SUPPLY

Name Plates • Dials
Scales • Diagrams, Etc.

Specify Type to Suit Your Requirements

1. Laminated Thermoplastic — heat to 125°F, waterproof, grease and oil resistant, available in white, clear, and many colors.
2. Laminated Thermosetting plastic — heat to 275°F, water, grease and oil resistant, available in white and many colors.
3. Engraved Thermosetting plastic — heat to 275°F, water, grease and oil resistant, available in black, white and gray with color filled letters if desired.

Quantities: From one up.

Let us recommend and quote on the proper material to fill your specific requirements.

ALLEGHENY PLASTICS, INC.
391 CHESTNUT ROAD SEWICKLY, PA.

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NO Lubricant Cost
NO Lubrication Labor

TRANSALL Heavy duty Idlers are Pre-Lubricated

Because of the permanent lubrication and the rugged construction, TRANSALL Idlers have a greater life expectancy than other makes of idlers. The more severe the service, the greater this advantage.

Why not investigate how we can help you keep operating costs to a minimum?

TRANSALL Idlers will probably slip right into your present installations, since they are dimensionally interchangeable with most leading lines.

Immediate Shipment

TRANSALL INC.

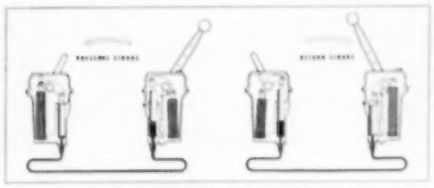
Manufacturers of a complete line of Belt Conveyor Equipment

117 North 11th St. Birmingham 4, Ala.

▼ BREVITY—Identify by IEN - 842 If you write the maker ▲▼

CONTROL . . Hydraulic equipment, transmitter operates remote receiver

Source: SPERRY PRODUCTS INC.
1002 Shelter Rock Road, Dept. IEN, Danbury, Conn.



Detail data in Bulletin 20-106

Standard packing has been replaced by "O" rings and a new hydraulic fluid known as Controloyle has been developed for use in the company's hydraulic positioning controls, previously described IEN-9684-47. The new units are suited for installations where temperature is likely to fluctuate over a considerable range. Neither the "O" rings nor the hydraulic fluid are affected.

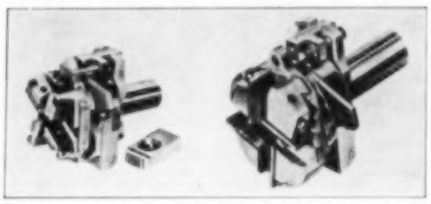
Two series known as Type F and Type H make up the line. The former has rated capacity of 400 in. lb. on the pressure stroke, 125 in. lb. on the return stroke. Housing dimensions of both transmitter and receiver, which are essentially the same, measure 1⅝ in. in width by 7⅝ in. in height. Tube length is maximum at 300 ft., motion of the lever is through a 60-deg. arc.

Type H is designed for applications where power requirements do not exceed 50 in. lb. on the pressure stroke or 15 in. lb. on the return stroke. These units measure a little over 1 by 3¼ inches. Motion of the lever is through a 60-deg. arc. Tube length is to 100 feet.

▼ BREVITY—Identify by IEN - 843 If you write the maker ▲▼

THREADING . . Self-opening die heads cut Class 3 threads on B & S machines

Source: JONES & LAMSON MACHINE CO.
12 Bennett St., Springfield, Vt.



Guarantees Class-3 threads

No. 16-S with reversible radial-type chasers to present two cutting edges. No. 18-S and 19-S, both with tangent-type chasers, have been added to the company's line of self-opening die heads. The three cover a size range from No. 0 to 1¼ inch. Assembly includes an adjustable trip that can be converted for pull-off or external trip and can be supplied with a locking handle for use on small turret lathes.

Slight float axially provides a cushioning start and helps protect the chasers. Leading edge of the chasers extends beyond the face to permit threading close to a shoulder.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

▼ BREVITY—Identify by IEN - 844 If you write the maker ▲▼

TOLEDO

Mailing and PARCEL POST SCALES

Model 419—5 lb. capacity. Air mail, first class, parcel post, etc.

Control Postage Costs!

Save time . . . stop excess postage costs . . . avoid ill-will of "postage due" . . . with the speed and dependable accuracy of Toledo Scales! Choice of 11 models for mailing and parcel post . . . each with automatic Toledo indication of correct postage. Write for bulletin 3047-B. Toledo Scale Company, Toledo 1, Ohio.

Model 3659—Full capacity parcel post and express scale. Computes for all zones.

TOLEDO
HEADQUARTERS FOR SCALES

▼ BREVITY—Identify by IEN - 845 If you write the maker ▲▼

The only portable machine which reproduces 15 sizes from one master alphabet.

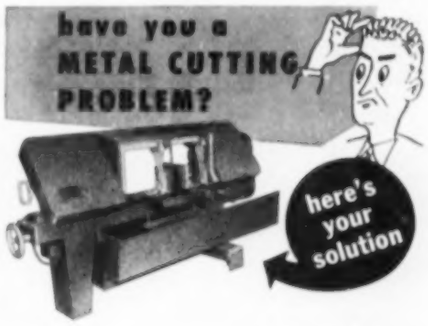
The only one with adjustable copy holding slides for multiline engraving in one set-up.

Self-centering holding vise for nameplates.

Send for Booklets
1-S 23—portable model
N-23—heavy duty model

NEW HERMES, Inc. new hermes Engravograph

▼ BREVITY—Identify by IEN - 846 If you write the maker ▲▼



Want continuous or intermittent production cutting? Need accuracy of a few thousandths with no burr and minimum kerf? Want to cut bars, rounds, angles and odd shapes at lowest possible cost? Then, get a Kalamazoo Band Saw!

Three sizes are available for cutting 6" to 12" round and from 6" x 10" to 12" x 20" flat. All models can be had with casters for complete portability. Each model has many exclusive features which assure *better cutting at lowest cost.* Write for complete details.

MACHINE TOOL DIVISION

Kalamazoo TANK and SILO CO.
111 HARRISON ST., KALAMAZOO, MICHIGAN

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MANY INDUSTRIAL ROLL PROBLEMS are solved by using

SHAF-TITE* ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48
Most complete publication of its kind

Industrial Roll Division
RODNEY HUNT MACHINE CO.
173 Main Street, Orange, Mass.

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▼ BREVITY—Identify by IEN - 848 if you write the maker ▼

STURTEVANT ROTARY FINE CRUSHERS

Crush or Granulate to Fine, Even Sizes without Excess Dust...

Cross section view illustrating the crushing action.

These rugged crushers speed output of fines, cut reduction costs. Desired fineness is quickly obtained by regulating hand wheel. "Open-door" accessibility permits fast, easy cleaning. They crush fine . . . crush fast and do not clog. Available in output capacities from 1 to 30 tons-per-hour. Write for catalog.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 24, MASS.

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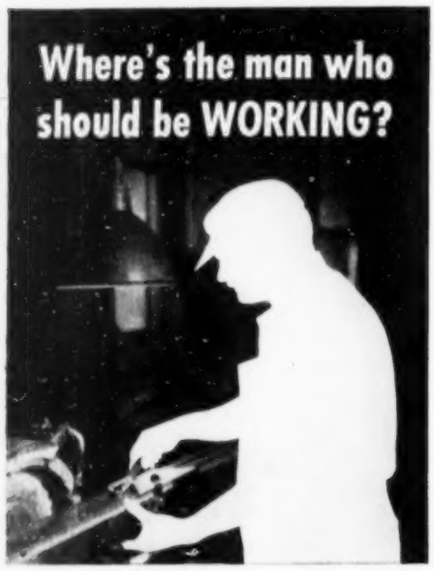

He's busy WALKING—but with Executone he'd be on the job!

Executone voice-to-voice communication eliminates the need for anyone leaving his work to get information, give instructions, order material, locate other personnel.

Engineers, secretaries, production men, clerks or executives *all* get more work done *faster*—without taking a single step! Executone saves hundreds of working hours every week! Everyone stays on the job—has instant contact with everyone else at all times!

Executone relieves switchboards of "inside calls"—helps step up production and efficiency.

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NEW LITERATURE—Continued

SEALING . . Sheet packing in gum rubber, neoprene, cloth-inserted, also diaphragm sheets; descriptions, standard sizes and weights, service recommendations. "Rubber Sheet Packings," 8 pgs. Raybestos-Manhattan Inc., 47 Thomas St., Manheim, Pa. **IEN-092**

SHEARING . . Machines to cut circles, straight or irregular shapes in sheet materials also to bead, fold, nibble; operating principle, selection table, application sketches. Bulletin, 8 pages. American Pullmax Co., 2651 N. Western Ave., Chicago 47, Ill. **IEN-093**

SIGNALING . . RCA "Utility" metal detector to signal presence of tramp particles in non-metallic materials; description of the components, installation factors, sensitivity. Catalog E-41, 4 pages. Erie Mfg. Co., 1503 E. 12th St., Erie, Pa. **IEN-094**

SOLENOIDS . . "Ledex" rotary solenoids with starting torque on 45 deg. stroke range of ¼ to 50 lb. in.; dimension drawings on six types, adaptations, typical uses. Bulletin 351-RS, 4 pages. G. H. Leland, Inc., 139 Webster St., Dayton 2, Ohio **IEN-095**

STEELS . . Illustrated facilities of company's new 4-acre steel service plant in Cincinnati including cutting, fabricating, warehousing of standard and special steels. "Our New Home", 12 pages. Joseph T. Ryerson & Son Inc., Box 500-A, Cinn. 14, Ohio **IEN-096**

TAPES . . Adhesive cloth tapes for bundling, sealing, thread protection, edging, protecting; data on 1,500 applications by industry and use. "Tape Use Manual", letterhead request. 78 pages. Polyken Industrial Tapes, 250-24 W. Adams, Chicago 6, Ill. **IEN-097**

TESTING . . Recording spectrometer for rapid routine direct-reading chemical analysis; schematic circuit diagram, description. "Production Control Quantometer", 8 pages. Applied Research Laboratories, 4534-28 San Fernando Rd., Glendale 4, Calif. **IEN-098**

TESTING . . Measuring equipment for laboratory and production testing; concise catalog descriptions on products ranging from current indicators to automatic oscillographs, together with references to detail literature available and list prices. Each description tells the scope of application to assist you in determining whether the product suits your intended job. Bulletin GEC-1016, 80 pages. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y. **IEN-099**

TESTING . . Brittle-coating for experimental stress analysis in product design; application instructions, examples of stress analysis on parts, details on a kit. "Stresscoat 103-A", 4 pages. Magnaflux Corp., 5914 Northwest Highway, Chicago 31, Ill. **IEN-0100**

TESTING . . "ElectroniK" recording potentiometer applied to the General Power Plant gas-dust analyzer IEN-10171-51; operating schematics, calibration notes. Sheet 10.14-6, 4 pages. Brown Instruments Div., 4456 Wayne Ave., Philadelphia 44, Pa. **IEN-0101**

TESTING . . Recent developments in laboratory equipment, such as Teflon-coated ground-glass joints, presented as illustrated data summaries. "What's New No. 14", 16 pages. Scientific Glass Apparatus Co., 129 Lakewood Terr., Bloomfield, N. J. **IEN-0102**

TESTING . . Radio-activity instruments; scalers, amplifiers, counting rate meters, Geiger-Muller tubes, sample-handling equipments, gages, radio-active isotopes; descriptive data. Catalog C, 108 pages. Traerlab Inc., 130-A High St., Boston 10, Mass. **IEN-0103**

THREADING . . Taps in six general groups for specific materials; thread sizes, dimensions, list prices on hand, machine-screw, pipe and other types. Bulletin ST-51, 32 pages. Detroit Tap & Tool Co., 415-A Boulevard Bldg., Detroit 2, Mich. **IEN-0104**

TOOLS . . Screwdrivers, hammers, hand drills, other tools, hardware; illustrated data summaries on these and on a gear reducer for a standard ¼-inch drill. Catalog 48-1951, 16 page. G. M. Co Mfg. Co., 13-10 43rd Ave., Long Island City 1, N. Y. **IEN-0105**

TRUCKS . . Steel-frame wood-deck platform trucks, also two-wheel hand trucks, specials; illustrated designs, platform sizes, dimension and wheel-size tables. "Steel-Framed Trucks", 4 pages. Fairbanks Co., 393 Lafayette St., New York 3, N. Y. **IEN-0106**

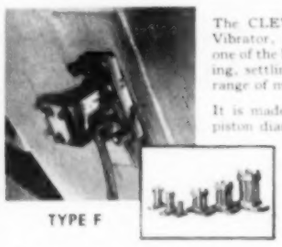
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 851 if you write the maker ▼

A PAID NEWS ADVERTISEMENT BY CLEVELAND VIBRATOR CO.

AIR VIBRATOR

moves wide range of materials



TYPE F

The CLEVELAND Type F Air Vibrator, illustrated herewith, is one of the basic types used in moving, settling or packaging a wide range of materials.

It is made in 6 sizes, from 1¼" piston diameter to 4" piston diameter, capable of handling materials from the smallest chute, bin or hopper to the largest of bulk storage bins.

The Type F Air Vibrator can move steel chips, dry colors, concrete, and fertilizer. It works equally well on sand, coal and soap; chipped ice and meat; wood chips, and almost any other material which is inclined to plug up, arch or bridge.

The Type F is easily installed by mounting or bolting through the skin of the hopper and a reinforcing plate. This distributes the impact of the vibration over a wider area and prevents distortion of the hopper skin.

An air-cushioned semi-noiseless type is available where NOISE is a factor.

RIN Stuck Lately? Catalog No. 105 will give you further details.

THE CLEVELAND VIBRATOR CO.
2737 Clinton Avenue • Cleveland 13, Ohio

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NEW HIGH-HEAT ALUMINUM PAINT for use up to 1000°

protects HOT metal surfaces from rust and corrosion!

When the heat's on, *Thermalite* can TAKE IT! 1000° does not discolor, blister, flake or burn *Thermalite*. Aluminum-base, with remarkable new "silicones" ingredient. Combines good appearance with outstanding protection. Brush or spray indoors or out, on boilers, exhaust stacks, kilns, furnaces, melting pots, etc. Resists corrosion, weather, chemical fumes, salt spray. Write today for full information on *Thermalite*—the hottest maintenance paint on the market!

Since 1883
TROPICAL PAINT & OIL CO.
Heavy-Duty Maintenance Paints
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FREE! Send for your free copy of the "Industrial Paint Index"—a quick, convenient reference chart for many maintenance paint applications. Send today!

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✓ FOR HAULING ALL KINDS OF INDUSTRIAL PRODUCTS—MATERIALS

✓ MADE IN SIZES AND CAPACITIES TO MEET YOUR NEED

✓ FEATURE TIMKEN BEARINGS
PNEUMATIC OR SOLID TIRES
ALL STEEL WELDED CONSTRUCTION

MODEL TF-50
2½ Ton Capacity

MODEL TD-400
20 Ton Capacity

Write today for complete data!

Phillips Industrial Trailers simplify hauling of heavy loads in and around industrial plants . . . with substantial savings in time, effort, and money. Ruggedly built to withstand long, hard usage, these trailers are available in 2½, 5, 10, 15 and 20 ton capacities. Easily maneuverable—they can be used singly or in tandem, for every industrial hauling requirement.

MANUFACTURERS SINCE 1863 **PHILLIPS** MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

MATERIALS HANDLING EQUIPMENT

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NEW Outstanding Split Cutters

Increases Life of Engraving and Router Cutters

Save Time—Save Money
Reduced Tooling Time
Cutter Life Increased 500%
Strength at Points Increased
Four Points Available with One Tool
Grinding to Thickness Eliminated
Less Skill Required to Sharpen

The first improvement in Engraving Machine and Router Cutters since their invention years ago.

PITTSBURGH STENCIL and TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
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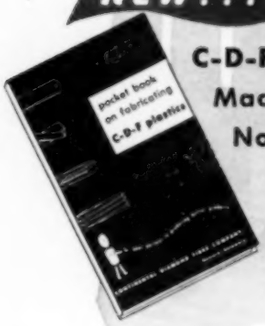
NEW . . . FREE



C-D-F Plastics Machining Notebook

Tells how to save time, money in fabricating laminates, fibre, mica, fabric-based plastics.

• If you fabricate plastics here's a vital new manual for you! Solves machining and forming problems, gives tool speeds and punch press data. Helps cut waste of material and time; simplifies ordering. Contains latest shop-tested information. Write for your free copy now!

C-D-F has sales engineers in principal cities.

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MANUFACTURER? TRUCK SALESMAN? BUYER?

You be the judge:

- A Baker Truck saved a PUBLISHER the cost of building a new warehouse by better utilization of space, and paid for itself in a few months by cutting handling costs.
- A SOFT DRINK BOTTLING PLANT is saving $4,000 per 24-hour day by improved handling with two Baker trucks.
- A METAL FABRICATING PLANT cut loading and unloading costs 75% with a Baker Truck and eliminated the necessity for interrupting production to build a ramp and dock.
- In a STEEL WAREHOUSE, 5 men and a Baker Truck now handle work formerly requiring 6, 8 and 10 men—often with overtime.
- A CHEMICAL PLANT quadrupled its volume without adding to its handling labor staff or warehousing capacity.

• An ELECTRICAL MANUFACTURER saves $10,000 per year in scrap-handling with this Baker Fork Truck with revolving head, and earns another $10,000 by getting a better price for the scrap.

Our profit and the salesman's commission are relatively small, one-time earnings. But our customers earnings go on year after year—often for more than a quarter of a century on a single investment.

Let us demonstrate how Baker Trucks can make profits for you.

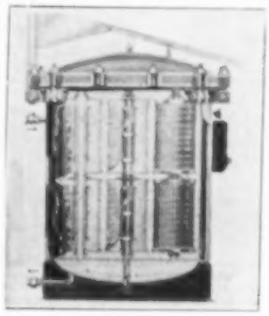
BAKER INDUSTRIAL TRUCK DIVISION of The Baker-Raulang Company
1226 West 80th Street, Cleveland 2, Ohio

Baker INDUSTRIAL TRUCKS

▼ BREVITY—Identify by IEN - 858 If you write the maker ▼

FILTERING . . Cartridge design for industrial oils, ½ to 4 gpm.

Source: HILLIARD CORP.
35 W. 4th St., Elmira, N. Y.



Can be hosted

New design of the company's Hyflow cartridge-type filter now includes a swing-bolt head construction to permit quick opening of the housing cover together with a lifting lever to pick up and suspend the cover while cartridges are being renewed or replaced. Either factory-made filter cartridges or a type to be repacked from a bulk supply of filtering material in the field are employed interchangeably.

Filtering materials are available for straight-run mineral oils and for heavy-duty detergent oils. Stationary and portable assemblies are included in the line. The filter removes atmospheric dust, moisture, scale, carbon soot and also purifies the oil in passage through the element.

Inlet and outlet connections measure ¾ to ⅞ inch. Required floor space measures 16 by 16 in. to 34 by 34 inches. Overall height is 31 to 53 inches. Weight is 230 to 935 pounds including the filter cartridges.

▼ BREVITY—Identify by IEN - 859 If you write the maker ▼

MARKING . . Rotary printing unit rides on and marks passing objects

Source: ADOLPH GOTTSCHO INC.
6-D Terminal Road, Hillside 5, N. J.

For cartons, cans, canisters, bottles

Rolacoder 401 applies on a conveyor or machine over which products are passing in regular order. The unit's type wheel projects into the path of the work on its hinged arm so it will ride the surface when the work displaces it. The type wheel takes up to four lines of copy for a maximum depth of 1 in. and a maximum length of 5 in. to apply on the top or side of the passing object. It will mark in any designated spot on an imprint side measuring between 1¾ and 6¾ in. in the dimensions parallel to the direction of travel.

Type are held by the company's new Metalok design which secure the interchangeable rubber pieces in place by a series of concentric metal rings that open upon turning a key and are locked by the same key. Twin rolls transfer a thin film of ink to the type surface to provide a correct quantity continuously.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 860 If you write the maker ▼

Springs are Springs

maybe so for most people . . . but NOT for ACCURATE

HOW often have you heard a spring user or even a manufacturer say "Springs are springs, what difference who makes them if the price is right?" Here at Accurate, we think it makes a big difference. *Exact* conformance to specifications can be mighty important if it means easier, faster assembly and better performance for your product. "Know-how" and facilities for making springs the least costly way can mean many dollars for you. Write for details.

ACCURATE SPRING MFG. CO.
3807 W. LAKE ST. • CHICAGO 24, ILL.

Accurate Spring — Service — More Power • Sensitivity

▼ BREVITY—Identify by IEN - 861 If you write the maker ▼

Now! CONTROL AIR OPERATIONS ELECTRICALLY!

PUSH BUTTON OR LIMIT SWITCH CONTROL FOR

- AIR CYLINDERS
- AIR CIRCUITS
- AIR-OPERATED PRESSES

Quiet . . . dependable . . . economical. Unlimited range of applications. Ideal for remote control or for building into equipment. Two types. Ask for Hannifin recommendations.

GET BULLETIN 230
Contains specifications, dimension table, wiring diagrams and other useful data.

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Avenue • Chicago 24, Illinois

▼ BREVITY—Identify by IEN - 862 If you write the maker ▼

Two Masoneilan Controllers

That Provide Precise Control at Moderate Cost
IN A MAJORITY OF PRESSURE APPLICATIONS
IN MANY TEMPERATURE APPLICATIONS

No. 2700 Pressure Controller — No. 2700 Temperature Controller

NOTE THESE MASON-NEILAN FEATURES

1. Same basic control mechanisms for pressure and temperature instruments insure simplicity, permit standardization of parts.
2. Pneumatic feedback — usually found only in more expensive proportional controllers . . . precise response.
3. Control point setting mechanism provides extreme accuracy of adjustment and easily read expanded index scale.
4. Proportional band adjustment between 3 and 90%.
5. Compact and sturdy case and internal mechanisms; all important internal parts of bronze, brass or 18-8 stainless steel.
6. Control action reversible with either bourdon or bellows.

Masoneilan models 2700 pressure and 3700 temperature controllers meet many industrial application requirements. They are moderate in cost . . . provide excellent performance, precise proportional response and ease of adjustment.

MASON-NEILAN REGULATOR CO.
1188 ADAMS STREET, BOSTON 24, MASS., U.S.A.

▼ BREVITY—Identify by IEN - 863 If you write the maker ▼

Easy On — Easy Off
AND EASY TO ALIGN

YOU CAN MOUNT a *"Magic-Grip"* sheave faster than any other sheave you can buy . . . and demount it just as fast. It runs true, will not slip or jam. And it comes off easily without hammering, forcing, or distortion.

To mount, simply slide sheave on shaft and tighten three screws. No alignment problem. To demount, use screws to break the tapered bushing grip. Sheave slides right off. Best of all they cost no more than ordinary sheaves. Even if you don't change sheaves often, it still pays to buy *Magic-Grip* sheaves for every drive.

Get complete facts on how *Magic-Grip* sheaves can save you money by calling your Allis-Chalmers Authorized Dealer or Sales Office, or write for booklet 6051. Allis-Chalmers, Milwaukee 1, Wisconsin. A-3238

Magic-Grip is an Allis-Chalmers trademark.

ALLIS-CHALMERS

BREVITY—Identify by IEN - 864 If you write the maker

Investigate the Advantages of H & K PERFORATIONS

—for cleaning, grading, straining and filtering . . . guarding and ventilating . . . acoustical treatment . . . ornamental enclosure, and related problems of product and machine design.

You have a wide selection of patterns to choose from, all accurately perforated.

For commercial processing, perforations may be had with as close as ± .0005". Materials include practically all metals and sheet materials such as plastics, fabricoids, plywood, etc.

Ornamental grilles—modern and classical patterns—are perforated in any currently available metal—finely finished.

Perforated sheets may be furnished rolled, formed, sheared, welded, brazed or otherwise fabricated to your specifications.

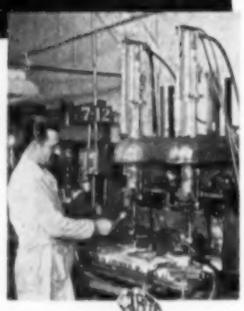
Catalog No. 62 tells the "hole" story—write for it!

The Harrington & King Perforating Co.

5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

BREVITY—Identify by IEN - 865 If you write the maker

Production Increased up to 75% with GENERAL "Time-Saver" DRILL FEED at PROTO TOOLS Plant



At the main Los Angles factory where PROTO Professional-Quality TOOLS are made—as at many other leading industrial establishments, GENERAL Time Saver Drill Feeds are sharply increasing production, prolonging the life of machine tools, providing a positive control that improves quality, and reducing operator fatigue. GENERAL Time Saver Drill Feeds are adaptable to most drill presses, operate on ordinary shop air pressure, and do not interfere with manual operation of the drill press. When you install GENERAL Time Saver Drill Feeds on your drill press equipment, you convert manual equipment to HIGH SPEED AUTOMATIC Production Machinery.

Experience of PROTO TOOLS with GENERAL Drill Feeds, as Related by Carl W. Coslow, Vice-President in Charge of Manufacturing

"Eight GENERAL drill feeds have been installed in our main PROTO plant since 1948.

"As you know, we make only professional-quality hand tools—manufactured to very precise and exacting standards. With your equipment, we are able to secure closer tolerances and more uniform results in drilling operations than with hand feed. The accuracy obtainable with hydraulic feed means that the finished parts meet our rigid inspection requirements.

"Naturally, we like the savings made possible by your Time Saver equipment. The automatic cycling feature, which permits one operator to control two spindles, results in production increases per operator up to 75%. Also, controlled power feed greatly increases the life of drills and counterbores.

"Another advantage is that hydraulic feed sharply reduces operator fatigue.

"Because of our favorable experience with GENERAL drill feeds, we recently added more units."

THE GENERAL PACIFIC CORPORATION
1728 Hooper (at Washington Blvd.) Los Angeles 21, California

SEND ME MORE INFORMATION REGARDING GENERAL Time Saver DRILL FEED.

NAME TITLE

FIRM

ADDRESS

THE GENERAL PACIFIC CORP.
1728 Hooper (at Washington Blvd.) Los Angeles 21, California

NEW LITERATURE—Concluded

TRUCKS . . Pallet dollies to handle loaded pallets in trucks, trailers and freight cars; illustrated description on use, models, ratings, dimensions, accessories. Catalog 706, 6 pages. Samuel Olson Mfg. Co., 2439-22 Bloomingdale Ave., Chicago 47, Ill. IEN-0107

TRUCKS . . "Wheel-Eay" two-wheel hand truck for boxes, bags, barrels to 500 lb.; general specifications on four models with rubber or General pneumatic wheels. Sheet WEL-51, 2 pages. Rapids-Standard Co., 342 Rapistan Bldg., Grand Rapids 2, Mich. IEN-0108

TRUCKS . . Hand-operated hydraulic lift trucks, 1,000 to 6,000 lb. capacity; specifications on pallet, skid and high-lift models, together with notes on operation and use. Bulletin 207, 4 pages. Raymond Corp., 2366 Madison St., Greene, N. Y. IEN-0109

TRUCKS . . Electric lift trucks and tractors, 1,000 to 10,000 lb.; illustrated review on the company's line, selection chart, typical accessory attachments. Bulletin P-5151 revised, 12 pages. Yale & Towne Mfg. Co., 11002 Roosevelt Rd., Philadelphia 15, Pa. IEN-0110

VALVES . . "Tag" self-contained temperature and pressure regulating valves for ¼ to 2-in. lines; operating description, ranges, examples of use. Bulletin 1230, 4 pages. Weston Electrical Instrument Corp., 641 Freilinghuysen Ave., Newark 5, N. J. IEN-0111

VIBRATING . . Pneumatic vibrator with 1 to 3-in. piston diameter, air cushioned to minimize noise in operation; installation suggestions, data on five sizes. Catalog 108, 4 pages. Cleveland Vibrator Co., 2736 Clinton Ave., Cleveland 13, Ohio IEN-0112

WATER TREATING . . Material to add to engine cooling water to maintain free circulation; general properties, notes on corrosion and scale prevention. Bulletin 5015, 4 pages. Dearborn Chemical Co., 51 Merchandise Mart Plaza, Chicago 54, Ill. IEN-0113

WEIGHING . . "Jeffrey-Traylor" weighing, batching and proportioning equipment for bulk materials; illustrated descriptions on components including conveyors. Catalog 841, 60 pages. Jeffrey Mfg. Co., 914 N. 4th St., Columbus 16, Ohio IEN-0114

WELDING . . "Aircomatic" inert-gas-shielded arc welding equipment for aluminum, bronze, copper, nickel, stainless steel; operating details and a schematic. Catalog AIC-717, 8 pages. Air Reduction Sales Co., 1656 Lincoln Bldg., New York 17, N. Y. IEN-0115

WELDING . . Selection chart of welding electrodes, listed by designation, properties, analysis, application methods, requirements met, competitive designations. Bulletin GEC-657 B, 4 pages. General Electric Co., Dept. 6X 201, Schenectady 5, N. Y. IEN-0116

WELDING . . Helmets, shields, lens, goggles, electrode holders, connectors, cable, ground clamps, gloves, clothing, work holders, carbon products; condensed catalog data. "Welding Accessories," 16 pages. Hobart Brothers Co., Box EW-164-SA, Troy 1, Ohio IEN-0117

WELDING . . Gas welding and cutting equipment; models and construction features of hand and machine torches, nozzles, tips, regulators, connectors. Catalog 20-C, 64 pages. Victor Equipment Co., 846-52 Folsom St., San Francisco 7, Calif. IEN-0118

WELDING . . "Kaptrode" resistance-welder electrode with replaceable tip; description, dimension drawings on standard tips and adapter shanks, remover tool. Bulletin 14,100, 4 pages. Weiger Weed & Co., 11642-46 Cloverdale Ave., Detroit 4, Mich. IEN-0119

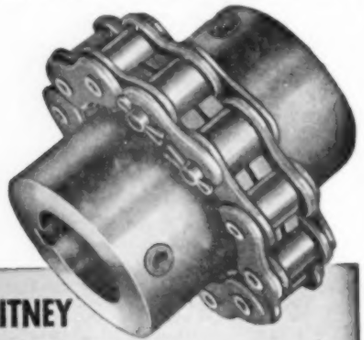
WIRE PARTS . . Illustrated suggestions on product design in fabricated-wire construction, sketches to show end treatments, ring and weld types, notes on facilities. "Use of Wire . . .", 20 pages. E. H. Titchener & Co., 63-67 Clinton St., Binghamton, N. Y. IEN-0120

WRENCHES . . "Challenger" socket wrenches; captioned pictures with notes on range of available sizes, also assembled in sets; open-end and pipe wrenches separately. Catalog C-851, 24 pages. Penens Corp., 3802 Wesley Ave., Schiller Park, Ill. IEN-0121

WRENCHES . . Pipe wrenches in a range of sizes, also monkey wrenches, other pipe tools such as vises and cutters, tube-cutting tools; illustrated data summaries on a line. Catalog 8, 8 pages. Trimont Mfg. Co., 53-69 Amory St., Roxbury 19, Mass. IEN-0122

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

BREVITY—Identify by IEN - 867 If you write the maker



WHITNEY ROLLER CHAIN *Flexible Couplings*

FOR YOUR DIRECT POWER DRIVE APPLICATIONS

Whitney Roller Chain Flexible Couplings offer the equipment manufacturer and machine user a practical and efficient unit for connecting power equipment to direct drives. All steel construction . . . precision roller chain and hardened cut tooth sprockets provide positive operation . . . assure long life.

Check these Whitney Flexible Coupling features, easily installed, allows for motor end float, disconnects without removing shafts or bearings, allows for slight shaft misalignment.

You can use Whitney Flexible Couplings wherever a positive yet flexible direct drive is required. Write for information.

WHITNEY CHAIN COMPANY
202 Hamilton Street Hartford 2, Connecticut

BREVITY—Identify by IEN - 868 If you write the maker

SELF-LUBRICATING Powdered Bronze Bearings To Your Designs

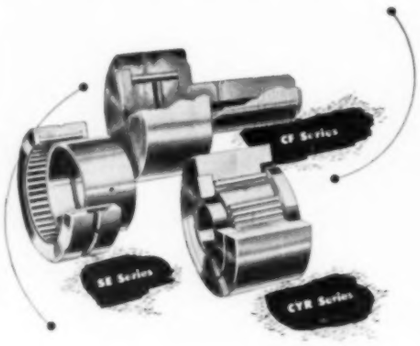
DUCTILOY powdered-bronze bearings are serving by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

Use is indicated wherever it is desired to provide bearings that will require virtually no lubrication or service attention — bearings accurate within thousandths, ready to drop or press into position — bearings for radial load or thrust or both, to intricate design if necessary.

May we quote to your prints
There's no obligation

NATIONAL MOLDED PRODUCTS, INC.
Manufacturers of
SINTRLOY - DUCTILOY - TUBELOY BEARINGS
1945 Mill Street St. Mary's, Pa.

BREVITY—Identify by IEN - 869 If you write the maker



MULTIROL *precision* is PERMANENT

The fine precision originally built into every McGill Multirol Bearing actually lasts longer. It can easily be considered permanent by comparison because Multirol Bearings are free from early internal wear that can destroy the accuracy of friction type bearings.

The rolling action of small diameter rollers maintaining a constantly lubricated roller line contact with raceways makes the difference — keeps the Multirol Bearing equipped machinery operating at top efficiency without costly maintenance for frequent adjustments and bearing replacement.

For the increased production demands just ahead you will need the performance extras of McGill Multirol Bearings. Adopt the SE Series for precision handling of increased loads when radial space is limited. Either the CF Series with stud or the CYR Series for shaft mounting will withstand heavy shock load in any kind of cam action application.

Write today for descriptive Multirol® Bearing Bulletins.

McGILL® precision bearings

McGILL MANUFACTURING CO., INC., BEARING DIVISION
100 N. LAFAYETTE ST., VALPARAISO, INDIANA, U. S. A.

▼ BREVITY—Identify by IEN - 871 If you write the maker ▲▼

SAVES TIME EFFORT ERRORS

LABELON PLASTIC TAPE

Write on it

WON'T SMUDGE • STAYS CLEAN FOREVER • RESISTS: DIRT · OIL WATER · ACIDS

STICKS WITHOUT MOISTENING

PERFECT FOR FACTORY, LABORATORY, OFFICE

Nothing also like LABELON—the amazing "Write on it" plastic tape! Use it to label stockroom shelves, bins, tools, hard-to-mark parts; for indicating rejects and service department repairs; for marking laboratory equipment, supplies, experiments; for panelboards or wiring; for office files, folders, etc.

LABELTON TAPE sticks without moistening to any smooth, clean surface—yet can be quickly removed. Resists heat up to 150°. Just write on it with pencil or stylus—message won't smudge. Choice of widths and colors. Handy dispenser with cutter bar. See your nearest dealer, or write for sample and prices.

Write to Dept. IEN

LABELON TAPE CO., Inc.
450 Atlantic Ave., Rochester 9, N.Y.

▼ BREVITY—Identify by IEN - 872 If you write the maker ▲▼

NEW FEATURES... greater efficiency

more economy in-

BUDA 2000 lb. FORK TRUCKS!

Look at the new Buda 2000 lb. capacity fork-lift trucks . . . compare them with any other . . . and you'll see why the new Budas are the big demand trucks today. For fast handling, operating economy and low maintenance—you can't beat them! See your nearby Buda Distributor today.

ENGINE and **HYDRAULIC SYSTEM** are completely accessible for servicing.
EASY OPERATING CONTROLS—two speeds forward—two speeds reverse operated by one lever. Quick change heavy duty **CLUTCH.**
EXTRA STRENGTH, self-aligning Mast. Replaceable bronze wear strips.
CENTER POINT STEERING provides for equal turning both ways. Pivot type axle with spring cushioned stabilizer.
CARRIAGE mounted on rollers with patented adjustable side thrust rollers, eliminating wear.
Full Front Vision **INSTRUMENT PANEL** with full complement of gauges and switches.
SAFE GASOLINE TANK located outside engine compartment and equipped with Protectoseal cap.

BH-34

Write for Bulletins and Specifications today.
The Buda Company, Harvey, Ill.

BUDA

Manufacturers of Diesel Engines, Maintenance of Way Products, Jacks, Earth Drills and Material Handling Equipment

▼ BREVITY—Identify by IEN - 873 If you write the maker ▲▼

LET'S GET IT STRAIGHT!

The "DIMENSIONAIR" Air Gage—

IS calibrated accurately over its entire range
IS set accurately with only one master
HAS a range of .003" with 2500 to 1 magnification
HAS much longer plug wear
HAS greater plug clearance so that the same plug can be used on both rough and finished dimension
REMAINS stable for long periods of time

Yes, let's get it straight, the Dimensionair does away with the limitations common to previous types of air gages.

Federal Dimensionair Proves Itself

Find out what the Federal Dimensionair will do for you! Discover how the exceptional measuring range of .003" lets you gage irregular shaped and tapered holes. Oil or coolants won't affect the Dimensionair: grit and dirt won't clog it: rough handling won't harm it. Write for complete information. FEDERAL PRODUCTS CORPORATION, 1291 Eddy Street, Providence 1, Rhode Island.

FEDERAL
Largest manufacturer of indicating type gages . . . exclusively.

▼ BREVITY—Identify by IEN - 874 If you write the maker ▲▼

TESTING . . Electronic equipment locates faults in electrical windings

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

The test is non-destructive

Portable design as shown in the illustration and a wheel-mounted mobile assembly are two available forms of the company's new Surge Comparison Tester to locate insulation faults and winding dissymmetries in motors, generators, transformers and coils. The instrument applies a voltage stress on turn-to-turn, phase-to-phase and winding-to-ground insulation in coils and wound apparatus. It detects grounded or shorted turns in the windings under test.

Operation is on a balance-and-comparison principle using two parts of the winding or identical coils at one time. A repetitive surge voltage to each part of the windings produces a trace on an oscilloscope screen in the housing face.

The screen trace will be the same for either direction of surge and only one trace will appear if there are no faults. Two traces of different shapes appear on the screen simultaneously if winding symmetry is disturbed by a ground, shorted turn, reverse coil group or uneven number of turns. Relative shapes and amplitudes of the two traits indicate the nature of the winding defect.

▼ BREVITY—Identify by IEN - 875 If you write the maker ▲▼

TRUCK . . Motor driven tractor, rated draw bar pull is 700 pounds

Source: BARRETT-CRAVENS CO.
4606 S. Western Blvd., Chicago 9, Ill.

Tractor Ox, initially designed to specification to provide a seat for the operator in place of the control tongue beside which the operator previously walked, has now been added to the company's regular line of battery-powered motor-driven equipment. The unit is fitted with a coupler at the rear. It can be employed also for pushing against the curved front. Controls center at a hand grip beside the operator. Power is shut off when the brakes are applied. Drive is at the front wheel beneath the motor assembly as in the company's regular Power-Ox.

The tractor measures 54 in. in length, with a Mercury coupler, by 32 in. in width, by about 40 in. in height. Speed is to 2½ mph. with a full load on a level surface. The unit will operate light at speeds to 8 mph. and will turn in a 33-in. radius. A storage battery is supplied as standard equipment. An engine-driven Ready Power unit can be supplied interchangeably on specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 876 If you write the maker ▲▼

CAST SPECIAL SHAPES QUICKLY . . . EASILY

. . . with these **FIRECRETE**
Castable Refractories

Special shapes or linings of Firecrete air-harden and are ready for service within 24 hours. Other advantages—no drying shrinkage, negligible firing shrinkage, high resistance to spalling, can be used in combination.

3X Firecrete—Effectively withstands soaking temperature to a full 3000 F. Provides savings through longer life and reduced shutdowns.

H-T Firecrete—A high heat-duty refractory made from an exceptionally heat-resistant base. For service between 2400 F. and 2800 F.

Standard Firecrete—The most generally applicable type of Firecrete—for use to 2400 F. Permits casting shapes or linings as thin as 1½".

L-W Firecrete—A lightweight insulating refractory concrete for use to 2400 F. Has low conductivity, low heat storage capacity and high resistance to spalling.

For patching and gunning, use 3X BLAZECRETE. Has exceptional adherence qualities, can be flipped into place with a trowel without ramming or tamping. For use to 3000 F. For further information, write to Johns-Manville, Box 290, New York 16, N. Y.

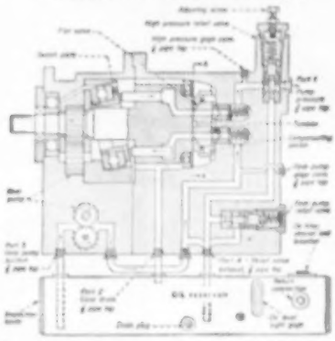
JM

Johns-Manville FIRECRETE
"The Standard in Castables"

▼ BREVITY—Identify by IEN - 877 If you write the maker ▲▼

HEAVY DUTY HYDRAULIC POWER PUMPS

Pressures to 3000 & 5000 psi



The Oilgear Company announces three new "Fluid Power" heavy-duty constant delivery axial piston pumps. Similar components have been tested and proven in more than 100,000 installations without a single failure on record. Features of these fluid power generators are: patented balanced small flat valves with controlled oil film between working surfaces; patented small one piece rolling pistons; patented quiet reverse flow relief valves; 100% superchange that minimizes oil compression, prevents air entry and assures quieter operation. These units in pressures up to 3000 and 5000 psi are especially suited to heavy duty pushing, pulling, lifting, lowering and maintaining high static loads on large clamping rams; for use in the iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. For illustrated descriptive and application data, write for Bulletin 46601. THE OILGEAR COMPANY, Dept. A, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

▼ BREVITY—Identify by IEN - 878 If you write the maker ▲▼

Improved Method Centrifugal SPRAY DRYER and CONCENTRATOR*

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Gear-bery Pumps with variable speed drives for handling the liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

DRYING and CONCENTRATING CO.
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

▼ BREVITY—Identify by IEN - 879 If you write the maker ▲▼

BARCOL

ELECTRIC OPERATORS FOR FACTORY GATES

Power-operated entrance gates to industrial plants are important for adequate protection and the proper control of traffic. The Barcol Electric Gate Operator, as illustrated above, is mounted in a weatherproof box at the side of the opening and attached by a chain at the correct points to insure smooth operation, with remote push-button control in the guardhouse. Barcol Operators are made for various types and sizes of such gates—let our representative give you the details.

FACTORY-TRAINED SALES AND SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY, 114 Mill St., Rockford, Ill.

▼ BREVITY—Identify by IEN - 880 If you write the maker ▼

Coil HANDLING at a Saving of TIME and LABOR

The SABIN COIL TRUCK

FOR HANDLING COILS OF STRIP OR WIRE BOX STRAPPING, WHEELS, TIRES, LATHE CHUCKS OR FACE PLATES, in fact anything with a hole through it.

As truck is moved up to article, the arm passes through the hole, then an easy pull back on handle picks up the load. Follower wheel minimizes trucking effort.

WRITE FOR BULLETIN ON FULL LINE OF BARREL AND DRUM TRUCKS.

The SABIN MACHINE CO., 6540 Carnegie Ave.
CLEVELAND 3, OHIO

Manufacturers of Many Types of ONE-MAN HAND TRUCKS

▼ BREVITY—Identify by IEN - 881 If you write the maker ▼

A new tool for cleaning dirty metal surfaces

WEAR-EVER NICKLTEX

Nicklex is a highly flexible precision-made cleaning tool that outlasts ordinary scour cloths and sponges, works easier, and can be washed clean.

For cleaning cocks, Y's, elbows, coils

Cuts through dirt

Nicklex is made from high nickel alloy flattened wire, diamond drawn, and produced with all the care of a fine machine tool. This special alloy wire, which holds its twist *permanently*, is knitted into a continuous interlocked mesh. It handles easily because it cuts through dirt, doesn't just push or rub it off. And it can be used flat, balled, or like a shoe-shine cloth in cleaning pipes and coils.

Use folded for flat or rounded surfaces

Doesn't splinter—Keeps clean

Nicklex will not splinter, unravel, leave a metallic surface deposit, or harm workers' hands. It's easy to keep clean, too. Just wash in soap and water, steam or solvent. Dirt particles drop through the mesh and Nicklex comes out clean as new. It withstands the most powerful acids and alkalies, is rustproof, and highly corrosion resistant.

In hard-to-get at corners, "ball" the Nicklex

Outlasts anything else

We don't know exactly how long Nicklex will wear in your plant, but we do know it outlasts anything on the market today. In one case on record a Nicklex cloth already has outlasted 144 curled wire sponges and is still going strong. In another case (a meat packing plant) it proved to be 30 times less expensive because it lasted so long. It will pay you to ask your supply house about Wear-Ever Nicklex. Or mail the coupon today to:

Washes clean—always SANITARY

THE ALUMINUM COOKING UTENSIL COMPANY
6901 Wear-Ever Building • New Kensington, Pa.
(Manufacturers of Wear-Ever Aluminum and Professional Coffees)

( ) Have your representative show me how Wear-Ever Nicklex is superior to scour cloths and sponges.
( ) Enter our trial order for a case of 12 Nicklex Flex-cloths at $11.40.

NAME .....
POSITION .....

Cut out, clip to your letterhead, and mail today

▼ BREVITY—Identify by IEN - 883 If you write the maker ▼

MELTING . . Electric solder pot, four heat ranges, 400 to 1,200 deg. F.

Source: DEE ELECTRIC CO.
1103 N. Paulina St., Chicago 22, Ill

Deep for long leads

The crucible in this new design of the company's electric solder pot, previously described IEN-3867-51, measures 4¼ in. in depth by 1⅝ in. in diameter as compared with the 2 by 2-in. dimensions in the former assembly. Temperature is controlled by an adjustable thermostat. The pot is available in any one of four ranges minimum between 400 and 600 deg. F., maximum between 800 and 1,200 deg. F.

The heating element is embedded in ceramic and encircles the crucible in two windings. One operates continuously, the other actuates the thermostat. Detachable splash guards protect the operator against burns. There is a receptacle to scrape dross into for a clean area around the crucible. Formex and Formvar film-insulated wire can be tinned by dipping the ends into the molten solder without stripping the insulation. Outside housing diameter is about 5 in., the same as in previous design.

▼ BREVITY—Identify by IEN - 884 If you write the maker ▼

HEATING . . Pipe coil assembly enters 14½ in. manhole in a tank

Source: REMPE CO.
338-42 N. Sacramento Blvd., Chicago 12, Ill.

Steam or hot water

New size is announced by the company for its Hot-Spot heater, previously described IEN-12612-45. The new unit will enter a 14½-in. manhole as compared to the previous required 16½ inches. The unit passes down through the manhole to rest on the bottom of a storage tank with inlet and outlet lines extending upward through the manhole.

A jacket surrounding the lower portion of the coil directs flow of the heated liquid to set up circulation in the tank. The user installs his own liquid-suction pipe down through the center of the assembly.

▼ BREVITY—Identify by IEN - 885 If you write the maker ▼

NICKEL ALLOYS . . For electronic use the subject of revised 28-page pocket booklet

International Nickel Co
67 Wall St., Room 703, New York 5, N. Y.

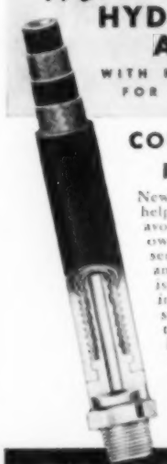
Sixteen alloys are described in revised "Inco Nickel Alloys for Electronic Uses" as to compositions, general characteristics, typical uses in electronic equipment, and available forms. They range from electronic grade "A" nickel to Inconel "X". References are included to technical available literature.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 886 If you write the maker ▼

Make your own HYDRAULIC HOSE ASSEMBLIES

WITH PERMANENT COUPLINGS FOR GREATER PRESSURES

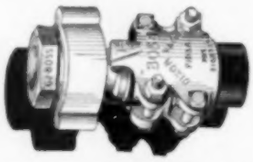


COUPLE BOTH ENDS IN 4 MINUTES

New revolutionary low-cost machine helps you *cut production costs*—and avoid delays—by fabricating your own permanent hydraulic hose assemblies! Does complete assembly and swaging job. Produces a finished hose, coupled at both ends, in 4 minutes. The Aro 2-piece steel coupling used in the process takes greater pressure, prevents breathing, resists corrosion, gives you a BETTER hose assembly than you've ever seen before! Write for bulletin. Pyles Industries, Inc., 8926 Second Ave., Detroit 2, Mich. Subsidiary of The Aro Equipment Corp.

PYLES HOSE COUPLING MACHINE

▼ BREVITY—Identify by IEN - 887 If you write the maker ▼



"GJ-BOSS"

GROUND JOINT FEMALE COUPLING, STYLE X-34

For Steam, Air, Water, Hydraulic Hose — High or Low Pressure

Soft-to-hard metal seal provides leakproof, trouble-free connection. Parts — malleable iron or steel, rustproofed. Furnished with "BOSS" Offset and Interlocking Clamps. Deep, smooth corrugations give an excellent gripping surface for hose when clamp pressure is applied. Sizes ¼" to 4".

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.
PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "GJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

▼ BREVITY—Identify by IEN - 888 If you write the maker ▼

NEW!

TUBE-TURN SF (scale-free) welding coupling

- Eliminates risk of scale damage to valves, pumps, and other close-tolerance parts. Reduces down-time.
- Smooth interior reduces pressure loss and turbulence in piped fluids.
- Coupling joint is permanently leakproof; strong as pipe itself. Easy to insulate.
- Tongue and groove arrangement insures accurate alignment, smooth inside surface.
- Easy to install. Available for 1¼" to 12" diameter piping. Standard weight, extra strong and schedule 160.

Another "first" for Tube Turns, Inc. ...pioneer in seamless welding fittings.

WRITE TODAY FOR BULLETIN
Complete information, including specifications and prices, free on request.

"tt" and "TUBE-TURN" are trade marks of TUBE TURNS, INC.

tt TUBE-TURN

TUBE TURNS, INC.
Dept. LL-1, LOUISVILLE, KENTUCKY

▼ BREVITY—Identify by IEN - 890 if you write the maker ▲▼

CORROSION!

Bond Paint Tight to Any Metal with . . .

VINSYNITE-VINYL SYSTEM

You slash metal pre-treatment costs and at the same time seal out corrosion when you use the Vinsynite-Vinyl System. The system consists of Vinsynite, which bonds tight to the metal, *any metal*, and a Vinyl coating over Vinsynite that seals out corrosion. Both are easy to apply by spray, brush or dip.

We have prepared a detailed report on the corrosive resistance of Vinsynite-Vinyl System under numerous industrial and climatic exposure conditions. One of the tests described shows a Vinsynite-Vinyl aluminum coated tube unaffected by corrosion after being subjected to standard A.S.T.M. salt-spray test for 864 hours. Other tests show the system consistently lasts more than 2000 and as high as 8000 hours before corrosion become evident.

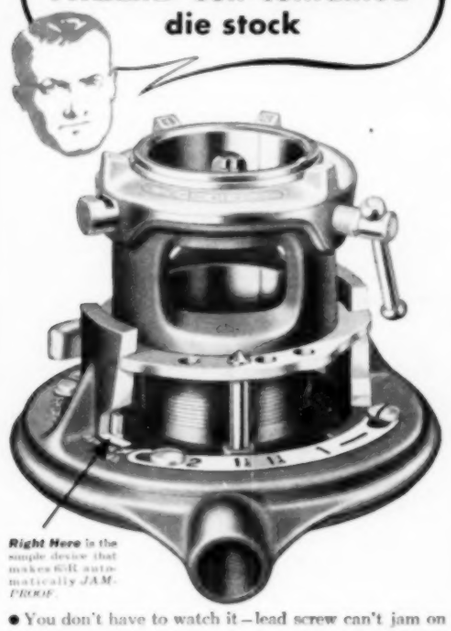
Write for your copy of this Vinsynite-Vinyl report.

SPECIALTY COATINGS, INC.
THOMPSON & COMPANY
1085 Allegheny Avenue Oakmont, Pennsylvania
Established 1947

▼ BREVITY—Identify by IEN - 891 if you write the maker ▲▼

You can't jam the new RIDGID 65R

Really streamlined pipe threading with this RIDGID self-contained die stock



Right Here is the simple device that makes 65R automatically *JAM-PROOF*.

● You don't have to watch it—lead screw can't jam on workholder. New jam-proof drive plate automatically kicks out driving ratchet pawl when standard length thread is cut. Your recent model 65R easily converted—just buy new drive plate, put in place of old plate. Perfect threads on 1" to 2" pipe with one set of 4 high-speed steel dies—sets to pipe size in 10 seconds, mistake-proof self-centering workholder sets instantly! Buy the new jam-proof RIDGID 65R at your Supply House.

RIDGID
Work-Saver Pipe Tools
THE RIDGE TOOL CO. • ELYRIA, OHIO

▼ BREVITY—Identify by IEN - 893 if you write the maker ▲▼

AIR CONDITIONING . . Cooling unit also heats, dehumidifies, circulates

Source: UNITED STATES AIR CONDITIONING CORP.
3318 Como Ave. S. E., Dept. IEN, Minneapolis 8, Minn.

Load is divided

Two compressors of equal capacity operate in connection with separate cooling coils and refrigeration circuits to divide the load in this new Type-DRK Kooler-Aire conditioner. The two are connected by a two-stage thermostat for normal operation. Starting is regulated by a time-delay relay that permits only one compressor motor circuit to close at a time. The wiring is set up to alternate the lead compressor so each will receive the same amount of wear. Six sizes in the line rate 15 to 50-ton capacity.

The unit can be converted for heating by addition of a steam or hot-water coil. A built-in evaporative condenser conserves as much as 95 per cent of the cooling water. Three field connections include ducts, water supply and drain, and power supply. Overall dimensions are about 115 to 188 in. in length, 42 to 60 in. in width, 74 to 105 in. in height. The motor-driven air-circulating blower on the 15-ton machine rates 6,000 cfm. and takes a 2-hp. motor. Rating is 16,000 cfm. with a 7½-hp. motor for the 40-ton assembly. The blower serving the condenser rates 4,400 to 10,000 cfm. on the 15 to 40-ton machine.

▼ BREVITY—Identify by IEN - 894 if you write the maker ▲▼

TRUCK . . Electric extension control for lifting and lowering on fork truck

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

Press to move, release to stop

Extension cords issuing from two spring-operated retrievers terminate in a pushbutton switch housing for application on any of the company's motor-operated fork-lift trucks. The extension permits an operator to stand on the floor at some distance from the truck or to ride the lift forks up and down as he chooses by manipulating the push button. The control housing secures in carrying position at the top of the truck uprights when it is not in use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

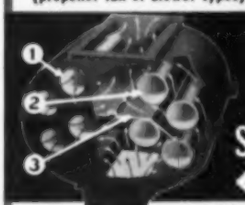
▼ BREVITY—Identify by IEN - 895 if you write the maker ▲▼

▼ BREVITY—Identify by IEN - 896 if you write the maker ▲▼

▼ BREVITY—Identify by IEN - 897 if you write the maker ▲▼

Mueller Climatrol

space-saving gas-fired unit heaters
(propeller fan or blower types)



Proof of **SUPERIORITY** ◀ **is here**

1. One-piece all-welded steel heat exchanger — no tie-rod, bolted, gasketed, or slip joints to leak, separate or crack.
2. Uniform air flow and heat distribution — burner extends under entire heat exchanger; insures maximum fuel economy.
3. High Crown Sheet — no flame impingement, no hot spots.

MUELLER gives you a unit to fit every application — 4 sizes: 60,000, 90,000, 120,000 and 150,000 Btu input capacities. A.G.A. and Underwriters' Laboratories approved — with design features that assure longer life, greater economy. These units are *shipped assembled and pre-wired* for quick, low-cost installation. 6-44

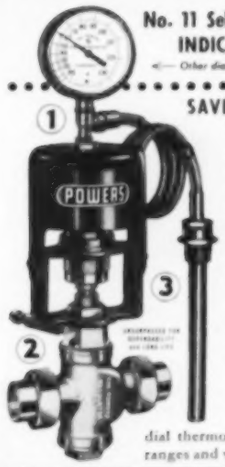
Write for full details —

L. J. Mueller Furnace Co.
2040Z W. Oklahoma Ave.
MILWAUKEE 15, WISCONSIN

▼ BREVITY—Identify by IEN - 898 if you write the maker ▲▼

POWERS

No. 11 Self-Acting TEMPERATURE INDICATING REGULATOR
Other dials available



SAVES LABOR—Stops Losses caused by over-heating

Automatically controls temperature of liquids or air at any point desired. Needs no compressed air or electricity for its operation.

3 Plus Values give you more for your money: 1) Easy to read 4" dial thermometer shows temperature of liquid or air being controlled, makes it easy to adjust regulator for proper temperature. 2) Has valve stem lubricator. 3) OVER-heat protection.

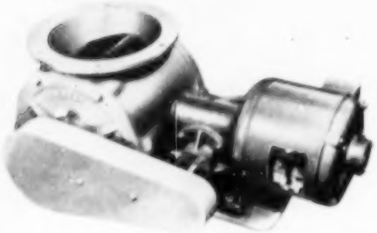
Powers No. 11 Regulators are available also without dial thermometer in a variety of 60° F. ranges and valve bodies ¼" thru 8". (110)

ECONOMICAL • DEPENDABLE • SIMPLE • EASY TO INSTALL

▶ ***WRITE FOR BULLETIN 329*** • THE POWERS REGULATOR CO.
3437 Oakton Street, Skokie, Illinois • Offices in over 50 Cities

BREVITY—Identify by IEN - 899 if you write the maker

PRATER ROTARY AIRLOCK FEEDER



FEEDS powdered and granular products into conveying line—quickly and accurately!
STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.
RECOMMENDED in the processing of: Ball Clay, China Clay, Diatomaceous Earth, Kaolin, Grains and Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volcanic Ash, Bronze Powder, Bauxite, Carbon Black, Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin.

PRATER — PRATER PULVERIZER COMPANY
1536 So. 55th Court • Chicago 50, Ill.

BREVITY—Identify by IEN - 900 if you write the maker

Check Temperatures Instantly... Accurately with Alnor TYPE 1500 PORTABLE PYROMETER

Wherever temperature readings are required—on the production line, in the laboratory or in the field—this sturdy precision instrument can bring you instant, accurate results.

Here's Why

It's Fast . . . in operation and quickly read. Precision movement designed to laboratory standards. Direct reading scale face is easily understood—no slide wires or conversion tables necessary.

It's Accurate . . . consistently to within ¼ of one percent under almost all variable conditions. Sturdy, protective case assures continued accuracy in toughest portable service. Ten scale ranges available, from 0-400° to 0-3000° F. Equivalent Centigrade scales available at no extra cost.

It's Portable . . . compact size, 6½" x 6" x 3", and light weight make this pyrometer highly portable and easy to use anywhere. Write today for complete details and prices. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle Street, Chicago 10, Illinois.

Send for Bulletin on 1500 Pyrometer.

Alnor — PRECISION INSTRUMENTS FOR EVERY INDUSTRY

BREVITY—Identify by IEN - 901 if you write the maker

ELECTRIC COUNTERS LARGE or SMALL

Standard of Dependability for 25 Years

Standard, Panel Mounting and Dustproof Types.
For built-in applications, photo-electric, remote, and centralized production counting.
Almost any voltage, AC or DC.

PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.
Send catalog of Wizard Electric and Photo-Electric Counter applications.

Company _____
Name _____ Title _____
Street _____ City _____ Zone ____ State _____
W-14

BREVITY—Identify by IEN - 902 if you write the maker

DRYING . . Infra-red equipment, single units for multiple assembly

Source: WIL-SON MFG. CO.
702 Huston St., Dept. IEN, Cloverport, Ky.

Sockets are staggered

The company announces availability of single-unit assemblies measuring 24, 32 and 48 in. in length, similar to the units shown in assembled form previously described IEN-3109-51. They are supplied with various spacings for Type R-40 heat reflector lamps. A 48 in. unit, for example, is made with 6, 8 or 9 sockets.

BREVITY—Identify by IEN - 903 if you write the maker

HEATING . . Coils and exchangers made of tantalum for corrosive liquids

Source: UNITED CHROMIUM INC.
100 E. 42nd St., Room 1728, New York 17, N. Y.

Shapes, sizes as specified

Tantalum is employed in construction of a new line of single or multiple-bend heating coils and also as the inner tube and tube sheet in a new heat exchanger available through the company for use in corrosive solutions. The tantalum is immune to plating and pickling acids except hydrofluoric acid. It has excellent heat conductivity and is resistant to thermal shock in both heating and cooling services.

The company is prepared to supply the tube in ¾-in. inside diameter with an 0.013-in. wall thickness or in a 1-in. inside diameter with 0.013 or 0.020-in. wall thickness. Coil lengths can be any specified amount starting at 20 inches. The exchanger employs an inner solution-carrying tube of the 1-in. tantalum assembled in a tantalum tube sheet and surrounded by a standard 2½-in. iron pipe. Insulation is by the user.

BREVITY—Identify by IEN - 904 if you write the maker

TRUCK . . Two wheel hand unit with folding wings for load trays

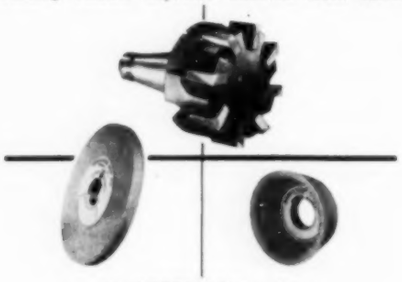
Source: COLEMAN-PETTERSEN CORP.
2121-25 St. Clair Ave., Cleveland 14, Ohio

Utility cart No. 1016 is a new tubular unit mounted on a pair of ball-bearing composition rubber-tired wheels. A pair of folding side wings can be opened to rest on the floor and support trays at 6-in. vertical intervals. The unit shown measures 50 in. in overall height and takes eight trays 25 by 29 inches. Weight is 20 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 905 if you write the maker

Grinding VASCO Supreme Inserted-Tooth Cutters



with ROBERTSON WHEELS

It is almost impossible, when grinding inserted-tooth milling cutters, to line the teeth up in true cylindrical form. For that reason they have to be ground to true diameter. Due to the intermittent cutting, an out-of-true surface soon deteriorat that of the grinding wheel, and sets up chatter.

With ordinary materials this job is very difficult, and with Vasco Supreme it is even more so. Yet an 8" x ⅛" x 1½" KA603-MV Robertson Wheel, used on a small Landis universal tool and cutter grinder, took this tough job in stride. It trued a 6" diameter cutter with new blades and was dressed only for the final finish. For the regrind, four cutters were sharpened without a dressing.

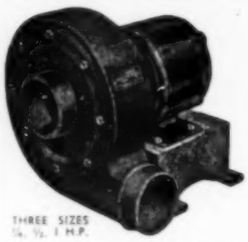
If you have an "impossible" job, blueprint your problem and let us recommend a precision-built Robertson Wheel to solve it. We specialize in tough problems.

ROBERTSON MANUFACTURING CO. TRENTON 5, NEW JERSEY

RESIN-BONDED AND VITRIFIED-BONDED GRINDING WHEELS • MOUNTED WHEELS • SEGMENTS

BREVITY—Identify by IEN - 906 if you write the maker

Sutton MOTOR DRIVEN PRESSURE BLOWER



THREE SIZES ¼, ½, 1 H.P.

ORDERED BY EVERY BIG NAME IN THE COUNTRY!

USED FOR EXHAUSTING DUST, SMOKE, FUMES, VAPOR . . COOLING AND DRYING . . CONVEYING COTTON, WOOL, SHAVINGS . . FORGE BLASTING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY to reduce weight and increase strength. CENTRIFUGAL TYPE. Delivers even, nonpulsating flow of air. Universal as to rotation and discharge. Direction of discharge may be changed to any of eight 45 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

WRITE FOR LITERATURE AND PRICES

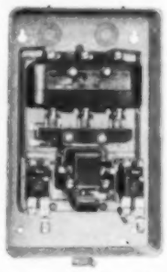
Sutton Manufacturing Corp
126 W. WILSON AVENUE NORFOLK, VIRGINIA

BREVITY—Identify by IEN - 907 if you write the maker

It's All New CLARK "CY"

the AC MOTOR STARTER that gives you MILL-TYPE HEAVY DUTY CONSTRUCTION and DESIGN

at NO PREMIUM above regular starter prices!



Here is a line of AC Magnetic Starters of heavy duty, ingenious design, and an entirely new principle of arc interruption, to give you these advantages:

- Forced rotation of arc minimizes burning and pitting of contacts.
- No filing, dressing or cleaning of contacts.
- No carbonization to shorten contact life.
- Wiring terminals protected from hot gases.
- No tools needed to inspect contacts.

Featuring Multi-Turn Magnetic Blowouts and Twin-Break Contacts

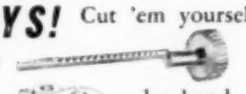
Strong blow-out coils and twin-break contacts are combined in the CLARK "CY" to give new standards in starter performance.

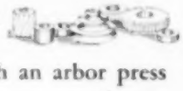
Let a CLARK application engineer show you what this new starter means to you in increased production and lower maintenance.

THE CLARK CONTROLLER CO.
ENGINEERED ELECTRICAL CONTROL . . 1146 EAST 152ND STREET, CLEVELAND 10, OHIO

BREVITY—Identify by IEN - 908 if you write the maker

KEYWAYS, KEYWAYS, KEYWAYS! Cut 'em yourself

like this 

in  by hand

with an arbor press any

width 1/16" to 1", in any bore from ¼" to 3", in sixty seconds. Write for descriptive folder and price list on the Kit to fit your need.

SEE IT AT BOOTH 216—PLANT MAINTENANCE SHOW, PHILA.

MAIL THIS COUPON FOR INFO AND PRICES

The du MONT CORPORATION, Greenfield, Mass.

Please mail descriptive folder and price list N on *Minute Man Keyway Broaches and Kits.*

Name _____
Company _____
Address _____

▼ BREVITY—Identify by IEN - 909 if you write the maker ▼

CALL

Your steel requirements get prompt personal attention at Ryerson. Some kinds and sizes in short supply; so use Gov't. ratings when they apply. We'll do our best to help.

RYERSON

PRINCIPAL PRODUCTS:
Bars • Structurals • Plates • Sheets • Tubing
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FOR STEEL

JOSEPH T. RYERSON & SON, Inc.
Plants at New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco

▼ BREVITY—Identify by IEN - 910 if you write the maker ▼

Clebar

the stop watch of *split second accuracy*

Decimal Timer for Time Study, minute divided into hundredths, side slide starts and stops hands, fly-back from crown, 7 jewels, non-magnetic, 30 minute register. SNAP-BACK ACTION.

There is a Clebar stop watch for every precision timing purpose. Write for new FREE catalog which illustrates more than a score of models.

CLEBAR WATCH AGENCY
521 FIFTH AVENUE, NEW YORK 17

▼ BREVITY—Identify by IEN - 911 if you write the maker ▼

Foredom FLEXIBLE SHAFT MACHINES
PROVIDE MORE POWER —LONGER MOTOR LIFE
BECAUSE • UNLIKE conventional type grinders MOTOR is NOT DWARFED to fit the hand!

YOU GET more precise control and unobstructed view of your work because of FOREDOM'S small-as-a-pencil handpiece which provides marvelous, effort-less operating ease.

For Every "SMALL-WORK" Job of GRINDING and FINISHING

2-WAY USEABILITY — Hang it up on any convenient hook or suspend it from a shoulder strap.

ALL 3 DEPARTMENTS — Maintenance, Production, Tooling, can make profitable use of FOREDOMS. At their low cost, you can afford to spot them liberally about the plant for emergency and every day use.

Other heavier duty models, bench and hang-up types, with your choice of 5 quickly-interchangeable handpiece types at proportionately modest prices.

THE SECRET IS IN THE PENCIL SIZE HANDPIECE

MODEL 100 (illustrated) 6-step foot rheostat $5.25 extra. Your choice of 3 32" or 1½" collets. Add 85¢ if you want both. $17.75

★ Quality Tested Since 1922 ★
See Your Industrial Supply Distributor—If He Cannot Supply You Write to Us

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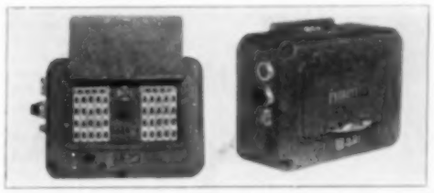
27 Park Place New York 7, N. Y.
Send your catalog No. N-4150.
Name
Address
City & Zone State

▼ BREVITY—Identify by IEN - 912 if you write the maker ▼

TIMING . . Sequence control for curing and breathing on a press

Source: EMMETT MACHINE & MFG. CO.
2249-3 Fourteenth St., Akron 14, Ohio



Timer "remembers" molding sequence

Robotron Model 304E is new design in the company's line of motor-driven multiple-circuit electric controls for hydraulic plastic-molding equipment. It controls alternate applications of pressure, release, retraction, resumption of pressure and return to "up" position in a desired number of reversals and time intervals.

The control actuates a solenoid-operated pilot valve. It, in turn, operates the main valve on the hydraulic press. Two banks of switch levers, protected by a hinged tamper-preventing cover, are set to determine the intervals. Press starting and stopping and manual control are provided for by switches on the side of the housing.

Any number of reversals and resumptions of pressure, to a total of 19, can be obtained and variably spaced by switch selection on the lefthand panel. Switches on the right determine the overall cure time in connection with a range selector that provides intervals of 0.25, 0.5 and 1.0 min. per switch. The range for each value is 5 to 10 min., 10 to 20 min., and 20 to 40 minutes.

By interchanging the drive motor faster or slower ranges can be obtained. Interchange is simplified by the plug-in design. The assembly includes a protective fuse and a hand-automatic switch to "kill" the operator's manual control unless it is moved to the "hand" position.

▼ BREVITY—Identify by IEN - 913 if you write the maker ▼

MARKING . . Rocking hand stamp mounts removable stencil over ink pad

Source: MULTISTAMP CO.
525-29 W. 21st St., Norfolk 10, Va.

Smear proof ink

Precut stencils are now available for use on the company's hand stamp stencil duplicator to provide a means to mark on address tags and labels or to impress data directly on boxes, cartons and packages. One stencil and one inking will make as many as 1,000 impressions, each uniform and clear cut.

Borders and legends, such as "to" and "from", are provided in the precut stencils so the user need only fill in information for individual orders by typing, writing, tracing or drawing in the spaces provided. Then the stencil is put in place on the ink pad and is ready for use. The impression is rolled or rocked on the surface.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 914 if you write the maker ▼

no coddling pul-leeze

STACOM TEMPERATURE REGULATOR* *Patented

You can install a Farris Stacom Temperature Regulator and forget all about it. You know it will operate positively and accurately under *all* conditions and at *all* times.

The Farris Stacom Temperature Regulator is dirt-proof, trouble-free. It operates with unheard of accuracy—to within plus or minus 1 deg. And that's not just under ideal circumstances. It functions with identical accuracy in the worst possible surroundings—provides air-operated sensitivity at self-operated cost.

Here's why: In patented Stacom Regulators, there are no packing glands to leak or bind. The liquid in the bulb flashes to vapor in the power bellows, producing hair-trigger response to move the valve disc.

You'll want complete details on this accurate and economical temperature regulator. Write for Stacom Bulletin 50-130.

Farris Stacom Corporation
432 COMMERCIAL AVE. PALISADES PARK, N. J.

▼ BREVITY—Identify by IEN - 915 if you write the maker ▼

M&M air fluff paper shredder

The Air-Fluff Paper Shredder is used for the commercial manufacture of paper excelsior. Also speedily, safely and efficiently destroys blueprints, letters and confidential records. Built in 3 sizes ranging in capacity from 200 to 2500 pounds per hour. Each machine can be adjusted to cut widths of 1/8", 3/16", 1/4", or 3/8". Write for descriptive literature.

mitts & merrill
1014 South Water • SAGINAW, MICHIGAN

▼ BREVITY—Identify by IEN - 916 if you write the maker ▼

Electric Heat With a Guarantee!

For OVENS and FURNACES

"Folded-and-Formed" Heating Elements covering entire work area in straight convection oven.

Custom-built insulated plug with "Fold-Form" Heating Elements attached, in air circulating oven.

STANDARD RACKS—1.5 to 7.5 K. W.—made in 22" x 22" sections are used vertically or horizontally, singly or in multiples, to provide any desired total K. W.

Standard "Formed-and-Formed" racks in batch type air circulating oven.

CUSTOM-BUILT RACKS available in wide variety of sizes, up to 600 K. W. in one bank.

SPECIAL RACKS, up to 10' high by 10' long, with any required K. W. per square foot of surface area.

REN INC
Electrically Heated Industrial Equipment
287 LEVERINGTON AVE. PHILA 27, PA.

▼ BREVITY—Identify by IEN - 917 if you write the maker ▼

INVESTIGATE "BEAR" SIMPLICITY and how it helps you eliminate noise and vibration in rotating parts *quickly, accurately* and *economically*...how it reduces wear of valuable machinery and improves performance of your finished products. "Bear" Dy-Namic Balancing Machines have simple micro-meter controls, direct-reading dials and adjustable supports to give you maximum control of balance.

FREE *Dy-Namic Balancing Manual* brings you information on latest Dy-Namic Balancing developments! *Write:*
Bear Mfg. Co., Dept. I-5, Rock Island, Ill.

"BEAR"
STATIC AND DY-NAMIC BALANCING MACHINES

BREVITY—Identify by IEN - 918 if you write the maker

YOU CAN TAKE IT WITH YOU!

BECKER
Self-Contained

SPRAY GUN

PRESSURE-POWERED
with
INEXPENSIVE
CO2
CARTRIDGE

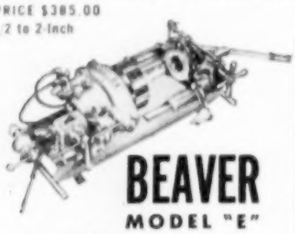
This completely portable spray gun is saving money in many industrial uses. Excellent for maintenance operations. Requires no compressor, motor, or electrical outlet. Has 21 liquid ounce capacity, heavy-gauge, steel container; cast aluminum head; brass and stainless steel inserts. Low cost CO2 cartridge sprays up to one container full, depending on viscosity. Use it for paint, varnish, enamel, oil, fire-proofing, rust-proofing, disinfecting. If your industrial distributor can't supply you, order direct and we will ship postpaid. (Extra CO2 cartridges 10 for $1, postpaid, or buy them from your local dealer.)

ONLY
$15.95
with three cartridges

SULLIVAN BECKER CO., Dept. 192-A, Kenosha, Wis.

BREVITY—Identify by IEN - 919 if you write the maker

PRICE $385.00
1/2 to 2-inch



RIGHT-HANDED

GEARS RUN IN OIL

HANDY CHIP TRAY

RUGGED STAND AVAILABLE

BEAVER
MODEL "E"
pipe and bolt machine

● Cuts, threads and reams all kinds of pipe from ⅛ to 2-inch. With a drive shaft and geared tools cuts and threads pipe up to 8-inch. Cuts off bolts and rods up to ⅞-inch. Threads bolts and rods to 1½-inch in one cut, up to 2-inch in two cuts.

Write Beaver for detailed bulletin—or order through your supply house!

"Over 50 Years of Friendly Service"

BEAVER PIPE TOOLS
262-300 Dana Avenue
Warren, Ohio, U.S.A.

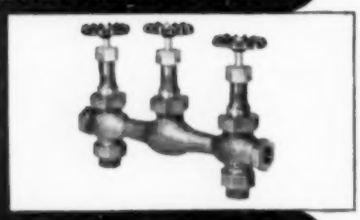
NO SPINDLE WHIP

SAFETY SWITCH LOCK

RENEWABLE BRONZE BEARINGS

BREVITY—Identify by IEN - 920 if you write the maker

The Compactness of HONEYWELL BY-PASSES



will simplify your piping

The Honeywell By-Pass is a compact, neat, easily-installed means of by-passing control valves, traps and other pressure units. It simplifies piping arrangements by eliminating a multitude of joints, nipples and elbows . . . by using a minimum of space . . . by saving time . . . by minimizing maintenance.

Available in Bronze as follows: sizes ½ to 2 inches . . . Bronze or Stainless trim . . . union bonnet . . . screwed ends . . 150-300 lbs. . . . from $21 to $116. Also available in Cast Steel . . . specifications and prices on request.

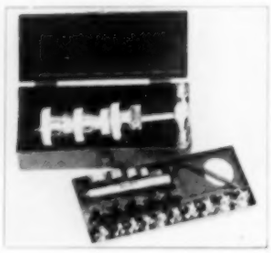
MINNEAPOLIS-HONEYWELL REGULATOR CO., Industrial Division, 1911 Windrim Ave., Philadelphia 44, Pa.

Honeywell
VALVE PRODUCTS
First in Controls

BREVITY—Identify by IEN - 921 if you write the maker

VALVE . . Reseating kit for removable seat faucets, to ⅞ inch

Source: J. A. SEXAUER MFG. CO.
2501-7 Third Ave., New York 51, N. Y.



A new set of cutters to reface faucet seats without removing them from the faucet has been added to the company's line of refacing tools. The cutters apply on the Bibb Seat Reforming Tool developed by the company some little time ago. A seat can be refaced three or four times. The job can be done in three minutes.

BREVITY—Identify by IEN - 922 if you write the maker

FLOORS . . Patching material to apply without interrupting traffic

Source: PERMAMIX CORP.
226-30 N. La Salle St., Chicago 1, Ill.

Lists at $10 per 50 lb. drum

Permamix trade names a new asphalt-base material. It is supplied in 50-lb. fiber drums in a consistency about the same as that of damp sand. In each drum is also a can of primer. A broken area in a concrete, brick, tile, asphalt or wood floor is cleaned out. Primer is brushed on to cover the area where the patch is to be made. Then enough of the material is filled into the area to leave a slight crown after it has been tamped into place. Floor dust or portland cement is swept over the tamped patch and traffic can be resumed immediately.

The material has a cold test of minus 10 deg. F. It can be applied and bonded indoors or outside without regard for either temperature or weather. It becomes harder as it is used, will not peel or chip when properly applied. It is resistant to attack by acids, oils, greases and water.

BREVITY—Identify by IEN - 923 if you write the maker

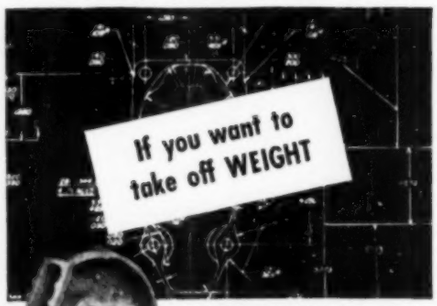
LIGHTING . . Fluorescent fixture takes two 4 watt lamps in 6 in. shade

Source: STOCKER & YALE
46-50 Birch St., Marblehead, Mass.

Circular base and link-type flexible supporting arm mounts a 2 by 6-in. drawn steel shade to enclose two 4-watt fluorescent lamps in this new fixture. Finish is in black wrinkle lacquer. The unit provides about 450 foot candles of illumination. The lamps are rated at 7,500 hr. of average life. Operation is without heat. List price is about $12.00.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 924 if you write the maker



a WELL-CAST lightweight magnesium or aluminum casting is your ready answer

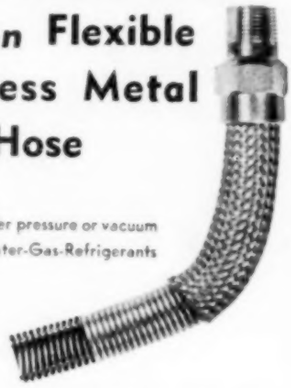
40 Years' experience producing quality lightweight castings for the aircraft, textile, pneumatic tool, automotive, domestic appliance, and other diversified industries everywhere.

Well-Made Wood and Metal Patterns
Ampco Bronze Castings

THE WELLMAN BRONZE & ALUMINUM CO.
2510 EAST 93rd STREET • CLEVELAND, OHIO

BREVITY—Identify by IEN - 925 if you write the maker

Johnson Flexible Seamless Metal Hose



For
conveying under pressure or vacuum
Steam-Oil-Water-Gas-Refrigerants

Ask for Bulletin J-3

Deep convolutions provide for extreme flexibility.

Made of brass, bronze, carbon steel, stainless steel alloys.

Standard or special fittings available for hot or cold service.

JOHNSON METAL HOSE INC.
P. O. Box 952 Waterbury 20, Conn.

BREVITY—Identify by IEN - 926 if you write the maker

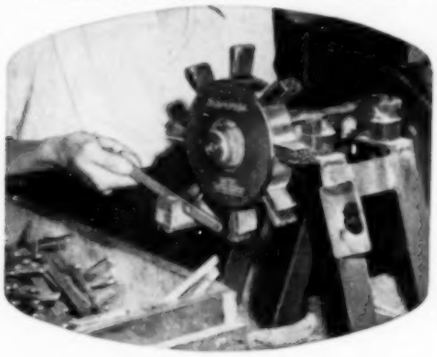
Well Stacked!

● Prefabricated pallet racks by Equipment Mfg. Inc. permit stacking to conserve floor space without tying up low level material. They are engineered for strength, safety and flexibility. There's a type to suit your particular needs.

Write for our catalog. It illustrates all types.

EQUIPMENT MFG. INC.
21564 Hoover Rd. • Detroit 5

▼ BREVITY—Identify by IEN - 928 if you write the maker ▲▼



SAND-O-FLEX

deburrs & finishes in one operation

Here is a good example of how Sand-O-Flex contour sanders deburr small, irregular parts and produce a perfect finish at the same time. The edges on these stainless steel hooks for hot racks (Made by Franz Industries, Los Angeles) are broken; nicks and scratches are sanded away, and the surface is uniformly surfaced with a No. 4 satin finish—all in one operation.

Over a quarter million Sand-O-Flex brush-backed sanders are in use in industry today performing an unlimited number of production fine finishing jobs on metals, woods, plastics, compositions with amazing savings in man hours. Sand-O-Flex is used portably or stationary (as shown above) on your present power equipment. Specially prepared Sand-O-Flex Abrasive Refills are available in a wide assortment of grits for all types of work. The abrasive is fed out by a simple patented indexing device, in a matter of seconds. Four models. Write for free catalog.

MERIT PRODUCTS, INC., 4023 Irving Place, Culver City, Calif.

▼ BREVITY—Identify by IEN - 929 if you write the maker ▲▼

ACUSTI - LUMINUS CEILINGS

NO NOISE • NO GLARE • EVEN LIGHT EVERYWHERE

Excellent results in both acoustical correction and higher glareless lighting levels were maintained in this office, one of over 200 ACUSTI-LUMINUS CEILING installations in offices, school rooms, drafting rooms, stores, etc.

Non-burning corrugated plastic is suspended at the desired ceiling level on acustic baffles, behind which continuous rows of fluorescent or slimline furnish the light source as shown above. Unsightly sprinkler pipes, ducts, etc., are hidden without impairing the function of the sprinkling system, or increasing fire insurance rate. Priced unbelievably low.

SEND FOR ADDITIONAL INFORMATION

LUMINOUS CEILINGS, INC.
2500 W. NORTH AVENUE CHICAGO 47

▼ BREVITY—Identify by IEN - 930 if you write the maker ▲▼

SPEEDY sez:

"SPEEDWAYS low cost CONVEYORS GO TO WORK in a HURRY!"

SPEEDWAYS Gravity Wheel Conveyors — light, sturdy, portable — quickly taken down, moved, set up where needed—without tools. Handle up to 600 lbs. distributed load.

SPEEDWAYS Gravity Roller Conveyors —best for "hard-to-handle" items like kegs, baskets, milk cans. Handle loads wider than conveyor. Mounted on stands or casters.

SPEEDBELT Portable Power "Boosters" —for loading; unloading, stacking, etc. Hand crank for quick, easy height adjustment. Three sizes.

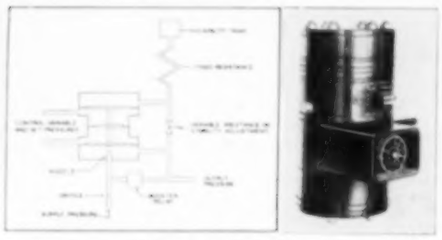
FREE—Helpful bulletin "How to Order Correct Size Conveyor." Also full information on SPEEDWAYS models. Write us today.

SPEEDWAYS Conveyors, Inc.
1244 Niagara St., Buffalo 13, N. Y.
Also Mfd. in Canada; Union of So. Africa

▼ BREVITY—Identify by IEN - 931 if you write the maker ▲▼

CONTROL . . Pneumatic equipment for remote variable process control

Source: TAYLOR INSTRUMENT COS.
60 Ames St., Rochester 1, N. Y.



Ask for Bulletin 98070

Bi-Act Controller is a new unit in the company's three-part Transet control equipment which includes the controller, Transaire transmitter previously described IEN-2651-50, and the miniature Transet recorder for graphic panel installation. The control is a non-indicating force-balance unit with adjustment centered at a single knob for two control responses, proportional and automatic reset. Intended application is in installations where it is desired to transmit the measured variable to some remote location.

The illustration to the left shows a simplified schematic drawing of the control circuit in connection with the diaphragm equipped control to show how the diaphragm inside the control housing moves and closes the opening between baffle and nozzle when transmitted process pressure varies. This action builds up back pressure which is directly applied to the booster relay to increase controller output.

The increased output pressure passes through the stability-adjustment valve or the variable resistance on its way to the capacity tank and then splits to go to the top chamber, the fixed resistance and the tank. A pressure change in the top chamber determines the width of the proportional band and the reset rate depending upon the setting of stability valve.

Pressure change in the top chamber results in driving the stack downward so output air pressure to the valve increases until the control valve moves far enough to bring the process variable back to the control point. Here the controller force-balance mechanism returns to equilibrium.

The controller measures 7½ in. in overall length. It has an adjustment range from 1 to 200 per cent of throttling range with automatic reset at 0 to 100 repeats per minute.

▼ BREVITY—Identify by IEN - 932 if you write the maker ▲▼

SAWING . . Portable electric tool for use in metal, plastic, rubber, wood

Source: VICTOR J. KRIEG INC.
55 W. 42nd St., 1st Floor, New York 18, N. Y.

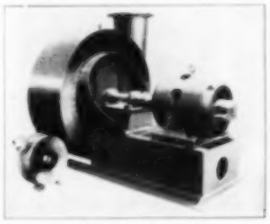
Made in Switzerland

Draw-cut action at 2,300 strokes per minute tends to hold this new Lefto electric tool down on a work surface so the operator can confine his attention to guiding the cut. The tool is available for 110 or 220-volt ac. as specified. Its universal motor also permits dc. operation. The stroke is through one inch. Application can be made in sheet metal to ¼ in. in thickness, aluminum to ½ in., wood to 2 inches. Weight is a little under 6 pounds. The larger of the two available sizes is particularly suited for industrial use.

▼ BREVITY—Identify by IEN - 933 if you write the maker ▲▼

BLOWER . . Motor driven centrifugal, fabricated steel design, to 200 hp.

Source: LAMSON CORP.
303-5 Lamson St., Syracuse 1, N. Y.



Outlet 4 to 24 inches

The company announces addition to its regular Allen-Billmyre line of single and multi-stage centrifugal blowers of a fabricated-steel construction which, until now, has been counted as special for custom manufacture only. The new line starts at ¾ hp., is standard to 200 hp., can be supplied larger to order.

Three models include one for operation at 1,750 rpm. and two in single and multiple-stage assembly respectively for operation at 3,500 rpm. Delivered air pressure is to 3 lb., the pressure remaining constant for a given blower independent of the air volume. Outlet can be set for delivery in any one of seven positions to the right and also to the left between horizontal and vertical to meet requirements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 934 if you write the maker ▲▼

All long-length bushings listed as standard in the Universal Catalog are regular stock items, which means speedier delivery to you. 146A

UNIVERSAL ENGINEERING COMPANY
PROVIDENCE & MICHIGAN

▼ BREVITY—Identify by IEN - 935 if you write the maker ▲▼

CHICAGO Mounted WHEELS

FIRST AND FINEST

10 Big Advantages

1. First in the Field — Unexcelled "Know-How"
2. Strongest Mandrels — Special Analysis Steel
3. Wheels Guaranteed to Remain on Mandrels
4. Constant Concentricity for Perfect Balance
5. Widest Variety of Sizes and Shapes
6. Strongest Construction for Longest Life
7. Greater Cutting Freedom — Faster Cutting Action
8. Better, Finer Finishes Positively Assured
9. Job Engineered to Your Particular Requirements
10. Recommended by Skilled Mechanics and Craftsmen

CHICAGO WHEEL & MFG. CO.
Dept. H, 1101 W. Monroe St.
Chicago 7, Illinois

Write for Free Catalog.

▼ BREVITY—Identify by IEN - 936 if you write the maker ▲▼

With a valve to suit the job air cylinders can be made to work wonders. Mead Air Valves, Single and Double Acting Air Cylinders, will help you cut costs, speed up work. Write for complete new Catalog of famous Mead air-operated devices!

MEAD SPECIALTIES COMPANY
4114 N. KNOX AVE., DEPT. E-12-A, CHICAGO 41, ILL.

▼ BREVITY—Identify by IEN - 937 if you write the maker ▼

THIS SYNTRON PARTS FEEDER is feeding checkers . . . all face up . . . single file . . . at a variable rate . . . automatically . . . to a packaging machine. BUT IN YOUR PLANT . . .

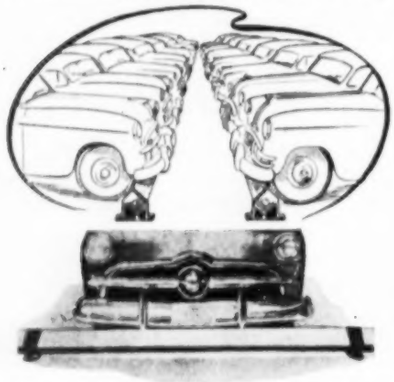
SYNTRON

PARTS FEEDERS

Will feed without damage parts of most shapes, sizes and materials to grinders and presses, inspection and packaging devices, and other automatic processing equipment. WRITE for catalog data, or send details of your problem along with sample parts for testing to . . .

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

▼ BREVITY—Identify by IEN - 938 if you write the maker ▼



SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground — no drainage problem.
4. Barrier is above ground — no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed — just line up and drive the anchor pins.
8. Easily moved — just pull the anchor pins. 100% reusable.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface — black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire — no shock.
14. Castings are non-rusting aluminum alloy.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS-BARRIER, INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 - INDIANA

▼ BREVITY—Identify by IEN - 939 if you write the maker ▼

THE DUKANE "HI-POWER" INTERCOM

Now Gives That Long-Needed EXTRA VOLUME...

for the noisy shop areas, large yards, warehouses, etc. Exceptional features and unlimited stations, with 12 watts of power, also make it a perfect sound system for the smaller school.

By the makers of FLEXIFONE *Intercom*
. . . models for every type business
. . . capacities to twenty . . .

. . . *and* DUKANE SOUND SYSTEMS
. . . for the school, church, hospital, and factory

DUKANE CORPORATION • St. Charles, Illinois
(Established as "OPERADIO" 1922)

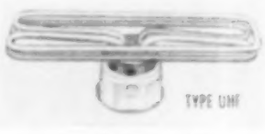
FREE CATALOGS

DUKANE CORP., Dept IEN-12, St. Charles, Ill.
Please send further information on
☐ Hi-Power ☐ Flexifone ☐ Sound Systems
Name _____
Address _____
City _____ State _____

▼ BREVITY—Identify by IEN - 940 if you write the maker ▼

HEATING . . Electric elements for urn, steam table, sterilizer

Source: ELECTRO-THERM INC.
925 Selim Road, Silver Spring, Md.



Ask for Bulletin 111

Type UHF, for flange mounting with a take-up plate as shown in the illustration, is one of three new Thermalink electric heating elements for built-in use in equipment such as coffee urns, steam tables, sterilizers. A companion unit, Type UHT, differs only in its straight-thread and lock-nut mounting arrangement. The third one, Type UHFJ, is the same as Type UHF except that it is the smaller. The first two mount in a $2\frac{7}{8}$-in. hole. The third requires a hole measuring 1⅝ inches. Rating is 1,000 to 6,000 watts and 600 to 1,500 watts. Operation is on 110 or 220-volt input as specified.

Assembly includes two separate seamless copper elements interlocked on the mounting header in the large units for three-heat operation. Screw-type terminals are standard and are enclosed in a 4-in. octagon junction box equipped with a cover. One seamless copper element is brazed into the header in the small unit for single heat operation. It is not available with the two separate elements.

▼ BREVITY—Identify by IEN - 941 if you write the maker ▼

PRESS . . Hand hydraulic design for laboratory use, 12 ton rating

Source: WABASH PRODUCTS CO.
1567-71 Morris St., Dept. IEN, Wabash, Ind.

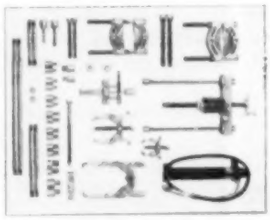
To correct our previous item

Twelve ton, not six, is the rating. Stroke, not throat, measures 6 in. in the hydraulic press described IEN-12711-51. We hope you will note these unfortunate errors.

▼ BREVITY—Identify by IEN - 942 if you write the maker ▼

PULLING . . Hand hydraulic tool set to service Caterpillar tractors

Source: OWATONNA TOOL CO.
371 Cedar St., Owatonna, Minn.



Set Number CT-644

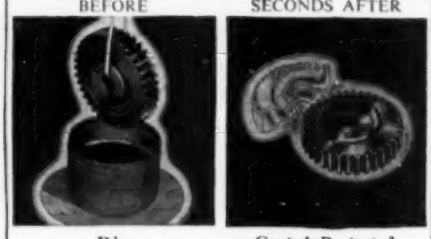
New combination of the company's 17½-ton hand-hydraulic ram and an assortment of pullers, adaptors and attachments make up a new set of pulling tools, particularly to service Caterpillar tractors. Pressure is applied without undue effort on the operator's part by the lever-operated pump. Application can be made on gears, bearings, sleeves, pulleys, shafts, sprockets, bearing outer races, bushings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 943 if you write the maker ▼

HOT MELT PLASTIC COATINGS for GEARS • TOOLS • PRECISION PARTS

BEFORE SECONDS AFTER



Dip Coated • Protected

DIP-PAK Protect vital, expensive tools, gears, and machined parts during storage and shipping with Fidelity's durable, transparent plastic coatings. Merely melt coating briquette, dip parts, cool. Lasts indefinitely. Tough; abrasive, moisture, rust resistant. To remove, slit, peel. Re-melt, re-use coating. Economical, practical, rapid. Protect parts; save money.

Write for Bulletins and Free Samples
Fidelity Chemical Products Corp.
470 Frelinghuysen Avenue, Newark 5, N. J.

▼ BREVITY—Identify by IEN - 944 if you write the maker ▼

Chem-Board Tote Boxes HELP BUILD AIRCRAFT . . .

Many plants building the planes needed to make the nation strong keep materials, parts and sub-assemblies flowing to production lines in thousands of Convoy Chem-Board Tote Boxes. The nesting boxes illustrated are stored in minimum space while awaiting new loads.

Chem-Board is made of corrugated fibre-board, chemically impregnated by Convoy's exclusive process. It is flint hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Orders rated DO-MRO are acceptable. Write today.

Standard and Custom-made Nesting—Stacking—Vertical CHEM-BOARD TOTE BOXES

CONVOY, INC.
P. O. Station B, Box 216-1
CANTON 6, OHIO

▼ BREVITY—Identify by IEN - 945 if you write the maker ▼

A Chair Designed to Make History

NEW TABLET ARM CHAIR *that* FOLDS

Clarin

Will make its mark as one of the most useful adjuncts to portable seating ever devised.

This FOLDING TABLET ARM CHAIR is just the thing for—
SALES CONFERENCES
DEPARTMENTAL MEETINGS
GROUP DISCUSSIONS
LECTURES
TAKING MINUTES, NOTES, DICTATION, etc.

The arm is an integral part of the chair—NOT AN ATTACHMENT. It may be adjusted to several positions—
1) Raised upright to permit free ingress and egress.
2) Completely lowered to the side.
3) Folded flat against the seat for compact storage.

Doubly Reinforced Steel Frame with Plywood Seat and Solid Wood Arm. Available with Seat only, or Seat and Back upholstered. Rubber Feet prevent noise and marring.

Folds to 3" thin.

The Only Tablet Arm Chair of its kind anywhere.

Write today for folder, prices and delivery data.

CLARIN MFG. COMPANY
4640 W. Harrison St., Dept. 30 CHICAGO 44, ILL.

▼ BREVITY—Identify by IEN - 946 if you write the maker ▼

WORTH READING

A Condensate Drainage System that Saves Heat, Saves Fuel, Improves Quality, Speeds Production

The C-B system is two pumps in one. A specially designed centrifugal pump energizes an eductor. It pumps the condensate from equipment drainage return lines directly into the boiler against boiler pressure in a closed circuit at any temperature or pressure—with complete automatic elimination of entrained air from the circuit before discharging condensate into boiler.

This unit speeds up the flow of condensate, and eliminates the entrained air along with the condensate from the process equipment. This results in a higher temperature on the heating surface of the equipment from a given initial steam pressure—increasing the heating efficiency often as much as 20%.

This better drainage represents more dollars saved than the certain reduction of 10-15% in fuel that results because of the high return temperature of the condensate into the boiler as feed water. Because this is a closed system, there is no flash loss such as exists in open process return systems. For example, a plant operating process equipment at 100 lbs. per square inch, or 336°F., with the Cochrane C-B System would return condensate drained from this process equipment to the boiler at 320°F., whereas the open return system does not exceed 210°F. The difference between 320° and 210°F. is saved.

Write for a copy of Publication 3250

COCHRANE CORP., 3152 N. 17th St., Philadelphia 32, Pa.

89 YEARS OF PROGRESS

COCHRANE

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NEW • NEW • NEW • NEW • NEW

AUTOMATIC SAFETY FEATURE

LINEMASTER

"LEKTRO-LOK" FOOT SWITCH

If you need a foot switch that's small, sensitive, safe, choose Lektro-Lok. Mechanical interlock allows only one circuit to function at a time. Operates on teeter-totter principle with selective circuits—yet single cord receptacle cuts costly harness assemblies.

Lektro-Lok weighs only 10 oz. Made to take it—rugged stamped metal case. It's the new, modern, *safe* foot switch from Linemaster, the Leader!

Only $5.25 (less in quantities)

Let us quote on your special problem

LINEMASTER the leader

Write today for folder and price list.

SIMONDS MACHINE CO., INC.
50 SAXON ROAD • SOUTHBRIDGE, MASS.

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LIKE AN ATOM-IC EXPLOSION

Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $10.13 @ $1 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:

$27.65 if coal (7,900 lbs.)
$38.00 if oil (633 gals.)
$50.63 if gas (67,500 cu. ft.)

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "EASY-TITES" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D. "EASY-TITE" Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems—that formerly broke down washer's structure (tested to withstand 300°F.)

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG,

Edition F, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and our NEW Catalog F promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-12
2503-05 Third Avenue, New York 51.

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

as advertised in THE SATURDAY EVENING POST

▼ BREVITY—identify by IEN - 950 if you write the maker ▼

HANDLING . . Accessory equipment to apply with NesTier tote boxes

Source: CHARLES WM. DOEPKE MFG. CO.
Emerald & Blue Ash Sts., Dept. IEN, Rossmoyne, Ohio

Company offers engineering assistance

Dollies, trucks, racks, skids, and a divider insert are now available as accessory equipment to assist in application of the NesTier tote box, previously described IEN-11380-51. These accessories combine to convert the tote box itself into a complete materials handling installation for work in process and storage.

The tote box is made of steel. Two lengths measure 17⅛ and 22⅝ inches. Two widths are 9¼ and 12⅛ inches. Each box is fitted with two pivoted steel-rod bales. They are hinged outward to nest the boxes in empty storage, inward to provide cross support for stacked assembly. In the latter position access is free to the box at both ends to add material or remove it as desired.

▼ BREVITY—identify by IEN - 951 if you write the maker ▼

PUMP . . Single stage centrifugal for utility uses, to 100 gpm., 120 feet

Source: ECONOMY PUMPS INC.
19th & Sedgley Ave., Philadelphia 2, Pa.

Ask for Catalog D-851

The impeller in this new Type SCC pump is threaded on the end of the motor shaft in front of a special end flange that forms the rear face of the pump housing. This flange is equipped with clamping lugs for bolts that secure it in place on the housing. A mechanical seal is mounted in the flange on the shaft back of the impeller. The arrangement permits removal of the impeller from the housing after removing the bolts and lifting the motor from its seated position.

The two sizes in the line are equipped with 1½ and 2-in. threaded suction, ¾ and 1¼-in. threaded discharge connections. Both run at 3,450 rpm. The smaller of the two assemblies takes a ½ to ¾-hp. motor. The larger takes a 1 to 3-hp. motor. The pump housing is integral with the inlet and outlet connections in a casting equipped with feet to act as an element in a pipe line. Overall height with a ¾-hp. motor in one case and a 3-hp. motor in the other is 16⅝ and 19¾ inches. Standard construction is cast iron, bronze fitted. Special materials can be specified.

▼ BREVITY—identify by IEN - 952 if you write the maker ▼

TRUCK . . Engine driven box unit for utility application, rates 1 ton

Source: HAMBRO MACHINERY DIVISION
350 Fifth Ave., Room 2108, New York 1, N. Y.

Illustration Shows Model 332

Structural frame connects the engine-driven power unit in this new utility truck with the load-carrying back wheels beneath the box-type body. The gasoline engine is an air-cooled single-cylinder 3-hp. unit. The transmission provides three speeds forward and one in reverse with free speed to 10½ miles per hour.

The box-type body stands 18 in. above the floor, has 12-in. hinged sides and carries a tractor-type seat for the operator. Overall dimensions are 8½ ft. in length by 40 in. in width. The unit is the first in the company's Wrigley line which is being further developed to include a range of types.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

▼ BREVITY—identify by IEN - 953 if you write the maker ▼

CAN YOU AFFORD NOT TO GIVE YOUR WORKERS PROPER Seating?

A tired worker costs MUCH more than a GOOD CHAIR

Royal's 515 STOOLS WILL HELP KEEP YOUR WORKERS AT PEAK EFFICIENCY...

Resulting in More Work Produced per Man Hour and Lower Actual Costs per Chair.

- STURDY MASONITE INSERT IMBEDDED IN SEAT PAN.
- LEG EXTENSION FOR EASY HEIGHT ADJUSTMENT.
- ADJUSTABLE BACKREST.
- OVEN BAKED GREY ENAMEL FINISH.

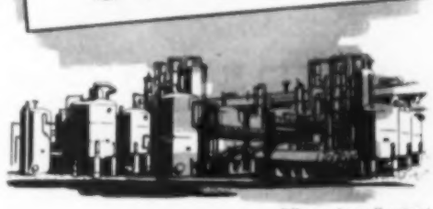
60 DAY Free TRIAL examine it... test it... use it without obligation

10 YEAR Free MAINTENANCE POLICY

ROYAL METAL MFG. CO.
175 NORTH MICHIGAN AVENUE
CHICAGO 1, ILLINOIS

▼ BREVITY—identify by IEN - 954 if you write the maker ▼

Painting Costs Cut 49%



Silhouette of a small section of C. and C. C. C. Texas City Plant

Here's real economy! Every year for five years, painting costs have been dropping at this fast-growing Texas chemical plant. This year, they're 49% lower than in 1946. The reason? VINYLITE Resin coatings, properly applied by competent contractors, now make up 95% of this huge paint job.

Chemical plants need surface protection—lots of it. So do oil refineries, pipe lines, dairies, tank cars, barges... hundreds of surfaces exposed to rough treatment, chemical corrosion, salt water, weather extremes, industrial fumes.

That's where these coatings excel. They can take abuse. They can be applied by spray, dip or brush. Paints based on VINYLITE Resins are tough and long-lasting—won't crack, chip, peel or fade. They stay put on metal, concrete and masonry. Extremely inert, odorless, tasteless, with a wide range of colors, they're ideal for coating packages and food containers, protecting contents from contamination and containers from attack.

Whatever your plant or product—from storage tank to tin can—inside and out—VINYLITE Resin coatings can bring you savings too. Get the facts now. Write Dept. LO-3 for addresses of suppliers.

Visit the Bakelite Exhibit, Booth 314-324, National Plastics Exposition, Philadelphia, March 11-14.

Vinylite BRAND RESINS

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

▼ BREVITY—Identify by IEN - 956 if you write the maker ▼

Solve "small parts" assembly problems

• Assemble • Press
• Rivet • Stake
• Punch • Mark . . .

with ½ ton or 1 ton Han-D-Press the new Hannifin air-operated bench press.

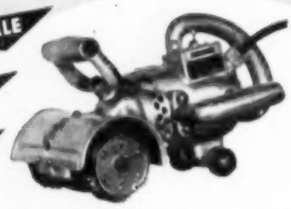
write **HANNIFIN**

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Ill.

▼ BREVITY—Identify by IEN - 957 if you write the maker ▼

ZIP OFF

SCALE
RUST
PAINT



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AURAND CLEANING TOOLS

AURAND rotary chipping action quickly, easily, thoroughly removes scale, paint, rust, and other accumulation from any hard surface. Renewable cutter heads and fool-proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

Get the time and money-saving facts

GET THE TIME AND MONEY-SAVING FACTS. WRITE TODAY TO DEPT. 699

AURAND MFG. & EQUIP. CO.
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▼ BREVITY—Identify by IEN - 958 if you write the maker ▼

Which ALLOY MEETS YOUR FASTENING PROBLEMS?

ALUMINUM
BRONZE
COPPER
STAINLESS
BRASS
MONEL

Let HARPER Help. Here are *all* kinds—with exactly the right alloy, size, type and finish you need. Harper specializes in nonferrous and stainless steel fastenings for services in all industries where resistance to corrosion, abrasion, heat and stress is vital. Over 7000 items—bolts, screws, nuts, rivets, and accessories—in stock ready for immediate delivery from warehouses and distributors, coast to coast. For latest catalog, mail coupon.

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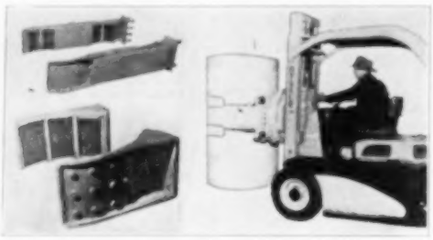
EVERLASTING FASTENINGS

SPECIALISTS IN ALL NON-CORROSIVE METALS

▼ BREVITY—Identify by IEN - 959 if you write the maker ▼

TRUCK . . Load carrying attachment to handle drums and cylindrical loads

Source: HYSTER CO.
2616 N. E. Clackamas St., Portland 8, Oregon



For special load carrying

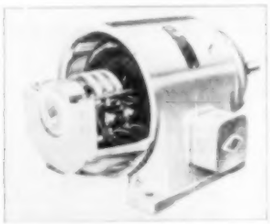
Rubber-faced arms to carry two or four drums and a revolving clamp attachment are now available from the company to apply on its Model-20 and Model-40 fork-lift trucks to handle cylindrical loads. The arms carry mechanically-attached vulcanized-rubber pads to grip the work. They are machined to bolt in place on the hydraulic head that rides the truck carriage for control at a valve by the operator.

Model-20 truck equipped with 2-drum arms has an average rated load of 1,800 pounds. Load rating is 2,800 lb. with the 4-drum arms on the Model-40 truck. The paper-roll attachment is adjustable for rolls from 22 to 44 in. in diameter.

▼ BREVITY—Identify by IEN - 960 if you write the maker ▼

MOTOR . . Slip ring assembly interchanges with squirrel cage design

Source: REULAND ELECTRIC CO.
Westminster & W. Mission, Alhambra, Calif.



For cranes, blowers, crushers

Flat end housings to accommodate face or flange-type mounting for the attachments and new compact design of collector rings and brush assembly characterize a new line of slip-ring motors that can be interchanged with standard-frame squirrel-cage induction motors. This makes it possible to take advantage of the variable speed and the high starting torque with corresponding low starting current inherent in the slip-ring design without additional motor installation space.

The motor is available in ratings from ¾ to 15 hp. in plain assembly and from ¾ to 5 hp. with a gear reducer for specified output speed. The line includes drip-proof and totally-enclosed assemblies. Brakes and other equipment can be attached on either end. Operation is in any position. In the wound-rotor construction the coil ends are tied down. Then the rotor is immersed in varnish and is baked into a single rigid mass. The collector rings and brush assemblies are accessible through drip-proof inspection ports.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 961 if you write the maker ▼

precision built . . .
powerful . . .
highly efficient . . .

Cramer

synchronous timing motor

Widely used for applications requiring a constant speed at a given frequency, the Cramer Type SX Synchronous Motor is a self-starting permanent magnet type motor . . . producing an exceptionally high torque. Compact . . . precision-built . . . with output speeds from 60 RPM to 1/24 RPM. Write for complete data.

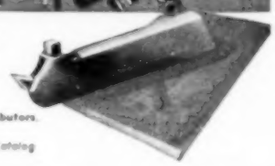
THE R. W. CRAMER CO., INC.
BOX 16, CENTERBROOK, CONN.
INTERVAL TIMERS • RESET TIMERS • CYCLE TIMERS • PULSE TIMERS
TIME DELAY RELAY • RUNNING TIME METERS • PERCENTAGE TIMERS

▼ BREVITY—Identify by IEN - 962 if you write the maker ▼

ARMSTRONG

Every tool shown represents a full line of quality tools, known the world over as the finest of its type.

Armstrong Tools are stocked by Industrial Distributors.



Write for Catalog

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
5243 W. Armstrong Ave., Chicago 30, U. S. A.
New York San Francisco

▼ BREVITY—Identify by IEN - 963 if you write the maker ▼

For Safety's Sake Use
DAYTON SAFETY LADDERS

Sizes 3 feet to 16 feet in height (measured from ground to platform) with standard rubber safety shoes at no extra cost.

Maintenance men everywhere rely on Dayton Safety Ladders for maximum safety and convenience. Daytons are constructed of tested airplane spruce and reinforced with rigid steel supports to give great strength and lightness of weight.

Handrails of steel guard the large roomy platform for added safety. Half of platform can be raised to form an extra step, when needed. These famous ladders can be set up instantly, are easy to carry and fold compactly for storing. Automatic locking feature insures safety while ladder is in use.

Write today for Bulletin No. 10

DAYTON SAFETY LADDER CO.
2339 GILBERT AVE. CINCINNATI, OHIO

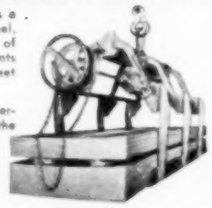
In Canada—Safety Supply Company—Toronto

▼ BREVITY—Identify by IEN - 964 if you write the maker ▼

Wide or Narrow . . .

1 C-F LIFTER HANDLES THEM ALL

Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.



Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other methods, a C-F Lifter will soon pay for itself.

Bulletin SL-25 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There is no obligation.

CULLEN-FRIESTEDT CO.
1310 South Kilbourn Avenue • Chicago 23, Illinois

▼ BREVITY—Identify by IEN - 965 if you write the maker ▼

ENAMELSTRIP

STEEL · ALUMINUM · BRASS · PRE-FINISHED COLOR COIL

gives BRIGHT STAR BATTERIES the

+ of improved production

− the costs of finishing

Bright Star's use of pre-colored metal coil assures a good finish before fabricating. Enamelstrip's exclusive process offers a flexible color coating which withstands the stresses of drawing, bending and forming without cracking or peeling. Costly, time-consuming finishing operations are entirely eliminated.

ENAMELSTRIP in continuous-feed coil coated and slit to specifications in any metal, any finish.

WRITE TODAY FOR DETAILED COLOR BULLETIN.

National Sales Representatives:

THE COATED COIL CORPORATION

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▼ BREVITY—Identify by IEN - 966 if you write the maker ▼

B.F. Goodrich

Wheelbarrows for light hauls

Moving heavy material for shipment

Simplifying storage problems

TIRE AND WHEEL & W ANALYSIS CAN SAVE YOU MONEY ON EVERY ONE OF THESE OPERATIONS

FOR more efficient materials handling, B. F. Goodrich offers a tire and wheel analysis plan designed to help beat rising costs and increase output. Trained BFG representatives study operations, make impartial recommendations regarding tire and wheel types and sizes, and give helpful care and maintenance tips . . . without obligation. Use the coupon for complete information.

A similar plan is available for manufacturers of industrial hauling equipment.

The B. F. Goodrich Co.
Department: TW-146
Akron, Ohio

Please give me additional information on your new Tire and Wheel Analysis plan.

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Company_____

City_____ State_____

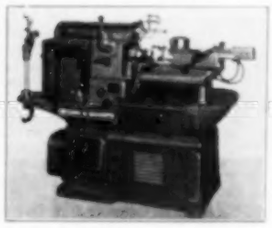
B.F.Goodrich

only B. F. Goodrich has a complete line of industrial tires.

▼ BREVITY—Identify by IEN - 968 if you write the maker ▼

LATHE . . Hand screw machine, three sizes take 3/8 to 1 in. stock

Source: BROWN & SHARPE MFG. CO.
235 Promenade St., Providence 1, R. I.



Bulletin available

New designs are announced by the company for its No. 00, 0 and 2 hand screw machines. The three sizes take stock measuring 3/8, 5/8 and 1 in. in nominal diameter or, where the work permits, to a greater capacity of 1/2, 3/4 and 1 1/4 inches. Maximum length that can be turned is 2 1/4, 4 and 6 inches.

Drive is by a 3-hp. motor on the first two machines, a 5-hp. unit on the third. Each machine is available with 196 two-speed combinations in 16 groups, each having a high speed with which any one of 12 low speeds can be selected by changing gears. Approximate ratios between high and low range from 1.6 to 13 to 1. Both high and low speed can be forward or backward, both in the same direction, or in opposite directions. One set of 16 pick-off gears provides the changes for both speed and ratio in accordance with a selection plate secured to the front of the base.

The reversible spindle is driven by chain connection and a friction clutch, the latter operated by either of two hardened sprockets riding on roller bearings on the spindle. The spindle itself is mounted on precision anti-friction bearings at the front and rear running in boxes supported in the machine bed. The front box has provision to compensate for wear. End thrust is taken by preloaded precision ball bearings included in the rear spindle bearing assembly. The spindle, its bearings, sprocket and clutch constitute a unit assembly that can be removed from the machine.

Control centers at a hand lever on the headstock for the spindle drive and at a lever beneath it to release and engage the collet chuck and the stock feed. A feed cycle requires about 1/2 sec. for the maximum feed length. A mechanical oiler provides force-feed lubrication to the main bearing in the spindle, the turret slideways, the cross slideways and the mechanisms in the machine except in the base. This oiler operates when the main drive motor is running. Gears, chains, bearings in the base, including the spindle drive chains, are lubricated by splash from an oil reservoir.

▼ BREVITY—Identify by IEN - 969 if you write the maker ▼

PROTECTING . . Respirator employs electrostatic filter element

Source: B. F. McDONALD CO.
5719-23 W. 96th St., Los Angeles 45, Calif.

No pre-filter

Dustfoe No. 55 is a new respirator in which a preformed throwaway filter element has been chemically treated to induce a static electrical field within itself. This field attracts dust particles and supplements the mechanical filtering action for thorough operator protection. The assembly includes an aluminum face piece that can be molded to a given facial contour and weighs a bit under 3 ounces. Air intake is at the bottom. Counter-gravity air flow prevents the heavier dust particles from reaching the filter element.

▼ BREVITY—Identify by IEN - 970 if you write the maker ▼

FILTERING . . Combination assembly of filter and pump for test liquids

Source: RUTHMAN MACHINERY CO.
1823 Reading Road, Cincinnati 2, Ohio

Keeps test liquids clean

Filter Unit 48380 is a new assembly of one of the company's bronze Runnaco Model 2-C centrifugal pumps and 1 1/2-hp. heavy-duty driving motor with a bronze Cuno Micro-Klean filter Model 6-A1. The filter encloses six cartridge elements of medium density. The combination unit is mounted on a base and is intended to filter water and other liquids used in leak-test tanks. An example is liquid used to test refrigerator compressors.

Flow rating is approximately 2,000 gph. at 36 lb. to circulate the liquid through the filter twice each hour. The assembly illustrated is semi-portable and is suited for tanks holding 1,000 gallons or less. Overall size is 40 by 24 by 15 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 971 if you write the maker ▼

Users Tell Our Story Best!

163 ORDERS FROM 3 CUSTOMERS ALONE...TOTALED 1,421,402 LBS.

SPEED PATCH

WORLD'S FINEST, FASTEST, FLOOR FIXER!

TAKES ONLY ONE MINUTE PER SQUARE FOOT!

Think of it . . . just 3 customers purchased almost 1½ million lbs. of Speed Patch. And more orders are coming from them regularly. They have ordered loads of other Rock-Tred products as well. Must be good. Let their experience be your guide. Find out how Speed Patch can make your floors pay off in cash. Write today!

ROCK-TRED Corporation

Manufacturers of a Complete Line of Building Maintenance Materials

7440-7450 North St. Louis Avenue • Skokie, Illinois

In Canada—Rock-Tred Corporation (Canada) Limited, Toronto 3

▼ BREVITY—Identify by IEN - 972 if you write the maker ▼

a Wealth of Technical Data on B&W STAINLESS TUBING for Pressure and Mechanical Uses

CHECK—CLIP—AND MAIL this listing for free copies

- TB-18—Properties and Methods of Working Seamless and Welded B&W Stainless Croloy Tubes and Pipe.
- TB-19—Condensed Technical Data on 10 Popular Analyses.
- TB-333—B&W Stainless Pipe—Seamless and Welded.
- TDC-130—B&W Stainless Croloy 18-8S (Type 304) Pipe and Tubing.
- TDC-133—B&W Stainless Croloy 16-13-3 (Type 316) Pipe and Tubing.
- TDC-134—B&W Stainless Croloy 25-20 (Type 310) Pipe and Tubing.
- TDC-140—B&W Non-Hardening Ferritic Stainless Steel Pipe and Tubing.

TA-16435

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
General Offices and Plants:
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

▼ BREVITY—Identify by IEN - 973 if you write the maker ▼

TUBE SWELLING CAN'T KILL THIS HOSE

Concord #20* Steam Hose

This hose gives you the exclusive protection of tough stainless steel wire braid inner lining that absolutely prevents tube swelling under continuous high pressure.

You are thus assured of permanent retention of original inside hose diameter . . . protected against swelling and constriction of tube . . . guaranteed full flow of steam *always* . . . and you can always re-couple easily when necessary.

Get in touch with your nearby BWH Distributor. He'll give you the complete story on BWH CONCORD #20 Steam Hose, or write

*Pat. applied for

BOSTON WOVEN HOSE & RUBBER CO.

Distributors in all Principal Cities

PLANT: Cambridge, Mass. • P. O. Box 1071, Boston 3, Mass., U. S. A.

▼ BREVITY—Identify by IEN - 974 if you write the maker ▲▼

BORIUM
INCREASES
BLAST NOZZLE LIFE
300 TIMES!

When you maintain orifice size, you maintain original blast velocity and efficiency ... Particles hit harder, remove scale, dirt, grease and grime quicker!
That's why every BORIUM NOZZLE is lined with pure tungsten carbide—most wear resistant metal known! Holds orifice size longer, frequently outlasts cast iron nozzles 300 times or more when used with sand and most common abrasives.
Write for circular!

SPECIAL BORIUM LINERS built to your specifications. Send blueprint for quotation.

STOODY COMPANY
11930 EAST SLAUSON AVENUE • WHITTIER, CALIFORNIA

▼ BREVITY—Identify by IEN - 975 if you write the maker ▲▼

for close check
on surface temperatures

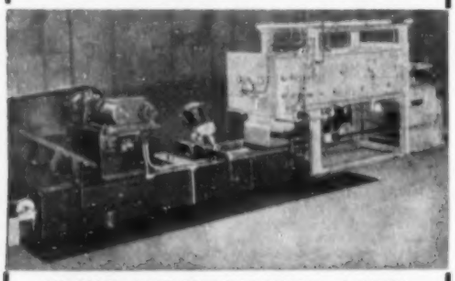
Alnor
PYROCON

Wherever a close and frequent check on low surface temperatures must be maintained on machines and materials, you'll find the handy Portable Pyrocon a valuable instrument. It is unexcelled for fast, accurate temperature readings of any surface, flat or curved, stationary or revolving. It may be used with plastic materials, waxes, rubber, liquids, oil or grease, molten soft metals, etc. The rugged Pyrocon can bring laboratory accuracy to your temperature measurement—at low cost. Write today for details on wide selection of thermocouples and extension arms.
Illinois Testing Laboratories, Inc.,
Room 517 • 420 N. La Salle St. • Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

▼ BREVITY—Identify by IEN - 976 if you write the maker ▲▼

HEAT TREAT AS A CONTINUOUS PROCESS



This AGF No. 166 RECIPROCATING FURNACE and QUENCH TANK has a capacity of 150 to 200 lbs. of work per hour. It is only one of five standard sizes

Use AGF RECIPROCATING FURNACES for heat treating of bearings, screws, tools, lock-washers, springs, pens and a wide variety of products. Clean hardening, annealing, case-hardening by the AGF "Ni-Carbing" process, normalizing and many other controlled atmosphere processes can be accomplished most efficiently.

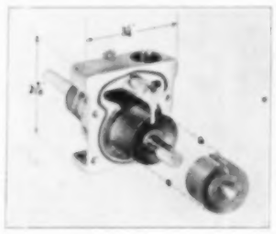
Write for Bulletins 815A and 820

AMERICAN GAS FURNACE CO.
974 LAFAYETTE STREET, ELIZABETH 4, N. J.

▼ BREVITY—Identify by IEN - 977 if you write the maker ▲▼

PUMP . . Rotary design with non-metallic oscillating elements

Source: ECO ENGINEERING CO.
10-14 New York Ave., Newark 1, N. J.



Housing partly removed

Teflon, a chemically-inert plastic, is employed in the cylindrical impeller, the shaft packing and it or Graphitar can be specified in the self-lubricating bearings of this new pump. The casing and shaft are stainless steel. So also is the rocking vane that seals the impeller and keeps it from rotating. Pumping action is developed by oscillating movement of the impeller as its eccentric drive shaft rotates.

The pump is known as the Allchem unit. It is available in ratings from 1 to 20 gpm. for pressure to 40 pounds. It can be employed to handle virtually any fluid chemical over a considerable viscosity range. The Teflon will not swell, shrink, harden or crack. It will not impart taste, color, odor or contaminate the fluid.

▼ BREVITY—Identify by IEN - 978 if you write the maker ▲▼

CORROSION PROOFING . . Chemical to coat interior of tanks, pipes

Source: SUDBURY LABORATORY
51 Dutton Road, South Sudbury, Mass.

Keeps water rust free

Aqua-Clear is a chemical supplied in liquid form, previously described IEN-4734-47 for corrosion-proofing purposes. It is now available in the form of crystals with a feeder that assembles in a line carrying water through a pipe installation or to various tanks. The water dissolves the crystals and forms a liquid. This liquid deposits a transparent microscopic porcelain-like film on the inside surfaces. The film covers over rust previously formed and coats new surfaces so they cannot corrode. The material applies equally well on iron, copper, brass, bronze.

Seven feeders are available for use in ¾ to 1-in. pipe lines. The smallest measures 4 in. in diameter. The largest measures 16 inches. Capacity for the crystal material is 4 to 175 pounds. List price with an initial filling is about $38 to $348. Additional material lists at $2 per pound in 10-lb. packages.

▼ BREVITY—Identify by IEN - 979 if you write the maker ▲▼

DUST COLLECTING . . Separator unit to reclaim diamond dust from a grinder

Source: AGET-DETROIT CO.
401 Main St., Ann Arbor, Mich.

For valuable dust

New design of the company's Model-420 Dustkop collector unit installs at a grinding machine employing a diamond wheel to reclaim the diamond dust. The unit consists of a motor-driven blower, a cyclone separator and a fiberglass filter capable of removing dust down to 0.2 microns. The inlet measures 4 in. in diameter and connects through a flexible fabric hose to the wheel hood on the machine. Required floor space is 12 by 23 inches.

▼ BREVITY—Identify by IEN - 980 if you write the maker ▲▼

HANDLING . . Lifting magnet for bar stock, pig iron, ferrous scrap

Source: COLES CRANES INC.
P. O. Box 942-A, Dept. 8, Joliet, Ill.

Made in England

Eight sizes, measuring 24 to 62 in. in diameter by about 29 to 53 in. from the face to the top of the chain sling, are included in a line of Phoenix lifting magnets now available in the United States. Lifting capacity, based on solid steel ingot or heavy armor plate, is 5 to 40 ton with current consumption at 1.1 to 12.6 kw.

Construction includes a core and back plate made of steel and an outer ring of rolled steel. The design permits quick dismantling so worn parts can be replaced or repaired. The energizing element is a single copper coil. Asbestos-covered wire is employed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 981 if you write the maker ▲▼

Specify this oil seal to save space!

Clipper Seal's narrow flange sections permit minimum depths for oil seal cavities, thereby allowing engineers greater design freedom in the present trend toward more compact and efficient machines.

In addition to saving space, there are other important reasons why Clipper Seals are specified today:

(1) Their tough one-piece rigid heel and resilient inner lip retains oil with light but positive sealing contact, protecting bearings against grit, moisture and corrosive fumes.

(2) Both endless and split type seals, with specially designed garter springs, help speed assembly of precision parts—make maintenance quicker and easier.

If simplicity of design is your problem, then use Clipper Seals. They're available in a variety of lip designs for different bearing surfaces, to fit shafts of ¼" to 66" in diameter, and for temperatures to 450F. For more complete information, send for brochure PK-46A. Address: Johns-Manville, Box 290, New York 16, N. Y.

JM Johns-Manville CLIPPER SEALS

▼ BREVITY—Identify by IEN - 982 if you write the maker ▲▼

Showing the Wales Drilling Machine in operation. Note the large size template with holes being drilled on large unobstructed table.

FOR PRECISION LAYOUT, DRILLING and REAMING HOLES

IT'S WALES Drilling Machines

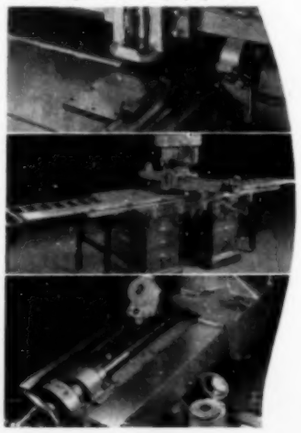
"Necessity is the mother of invention" . . . that is why the Wales Drilling Machine became a reality . . . there is no other drilling machine or jig borer like it . . . it meets the definite need of precision locating, drilling and reaming holes in material of practically any length and up to 36" wide.

Accuracy is the primary consideration in the manufacture of this exclusive Wales Drilling Machine which combines simplicity of operation . . . easier locating . . . faster drilling and reaming . . . and very close tolerance production.

Have the facts about Wales Drilling Machines at your finger tips by writing TODAY for the fully-illustrated, functionally-colored Catalog DM.

WALES-STRIPPIT CORPORATION
GEORGE F. WALES, Chairman
361 PAYNE AVE., NORTH TONAWANDA, N. Y.
Between Buffalo and Niagara Falls
WALES-STRIPPIT OF CANADA LTD., HAMILTON, ONTARIO

Specialists in Punching and Notching Equipment



Illustrating holes being accurately reamed in a small work piece.

Showing a Wales Extension Roller Table at each end of the Wales Drilling Machine. Note the long work piece that extends onto both extension tables from the machine table.

Showing "zeroing in" for precision accuracy by using precision optical gages.

BREVITY—Identify by IEN - 984 if you write the maker

"M-B" Model S-VT
18,000 RPM
"SPEE-DEE" Pneumatic
POLISHER

A development filling a distinct need. Produces remarkable results on real production work when abrasive rolls and pencils, also bands, etc., are used. Flexible air-control lever for starting and stopping. Husky, light weight, 14 oz. Power to spare. Special grease-sealed bearings. Will handle many applications, also with "High-Speed" Rotary Files.

ALSO "M-B" PNEUMATIC GRINDERS—AUTOMATIC AIR LINE FILTERS, REGULATORS AND LUBRICATORS

"Remember, Built-In Quality Remains Long After First-Cost Disappears"

Write for Literature

M-B PRODUCTS
46 Victor Ave.
DETROIT 3, MICHIGAN

BREVITY—Identify by IEN - 985 if you write the maker

Pittsburgh Brushes Solved these Problems!

1 CLEANING RED-HOT CASTINGS in 30 seconds!

A Pittsburgh brush answered U. S. Pipe and Foundry's problem of cleaning red-hot castings. This rugged brush works 40 hours a week, turning out thoroughly cleaned castings at the rate of one every 30 seconds . . . a speed record for any brush cleaning operation of this type.

2 POLISHING 10,000 heating units!

When the Edwin L. Wiegand Company wanted to remove ragged edges from their *Chromalox* Heating Units economically and *fast*, they turned to rough, tough Pittsburgh Brushes for the answer. The 6" Pittsburgh steel wire brushes they installed polish 10,000 heating units during their life.

3 CLEANING WELDS in close quarters!

Allis-Chalmers' problem was to find a brush narrow enough to fit between cooling fins of transformer radiators, yet strong enough to remove slag and spall on welds which could conceal pressure-reducing pinholes. Pittsburgh engineers recommended an 8" rotary wire brush. Problem was solved!

Let Pittsburgh Engineers Solve Your Brush Problems.

Pittsburgh's complete line of brushes of every type, for every purpose, will provide a practical and economical solution of any brush problem you might have. Drop us a line on your company letterhead for a copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing operation costs. Address: PITTSBURGH PLATE GLASS COMPANY, *Brush Div.*, Dept. M-5, 3221 Frederick Ave., Baltimore 29, Maryland.

PITTSBURGH
Power Driven
BRUSHES
BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS
PITTSBURGH PLATE GLASS COMPANY

BREVITY—Identify by IEN - 987 if you write the maker

CHUCK . . Collet closer applies in lathe spindle, three sizes

Source: CROZIER MACHINE TOOL CO.
652-56 N. Prairie Ave., Hawthorne, Calif.

Wear parts are hardened

New design in the company's line of collet-closing attachments employs a hand wheel in place of an operating lever at the rear end of the tube which extends through a lathe spindle to connect with a collet at the spindle nose. Three sizes, known as Models 1-A, 4-C and 5-C, apply in spindles with minimum bore at 0.750, 1.062 and 1.375 inches. The new design is available also for use on milling machines, dividing heads, grinding machines and special equipment in which a collet can be employed.

BREVITY—Identify by IEN - 988 if you write the maker

EXTINGUISHING . . Portable foam tower to discharge foam over oil in storage

Source: PYRENE MFG. CO.
554 Belmont Ave., Newark 8, N. J.

Ask for Bulletin "Portable Tower"

Construction is primarily of aluminum with weight at 475 lb. for a new telescopic tower-and-base assembly with which a hose line can be elevated to deliver fire-extinguishing foam from a height of 50 feet. A crew of three or four men can assemble and erect the tower ready to deliver foam on a tank fire within five minutes.

Installation of either a built-in or forcing-type foam maker of 300-gpm. water capacity will produce foam volume of 2,000 to 3,000 gpm. The head at the top of the tower can move through a 3-ft. distance while the base remains stationary.

BREVITY—Identify by IEN - 989 if you write the maker

PAINTING . . Self-adhesive masks die cut to cover specified surfaces

Source: BY-BUK CO.
4312-16 W. Pico Blvd., Dept. 27, Los Angeles 19, Cal.

Typical shapes

Masking paper to cover areas of a product to be kept free from paint in a finishing operation is adhesive coated on one face and supplied in specified die-cut shapes to make these new masks. The adhesive is covered with a crepe protecting paper to be stripped just prior to application. When the job is done the masks strip off.

Accurate but inexpensive dies are made by the company to the shapes required. Any sizes can be specified that will fall within 20 by 36 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 990 if you write the maker

Scrap iron and steel supplies are again running short of the amounts needed to maintain the present high level of steel production.

You're asked to search out the idle iron and steel in your plant and yard . . . and turn it over to your local scrap dealer.

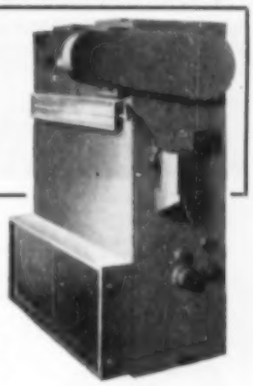
Be sure to include obsolete machinery, un-used jigs and fixtures, gears, pulleys, chains, pipe and other equipment . . . non-ferrous scrap is needed now, too!

DON'T DELAY...
GET IN THE SCRAP NOW

INDUSTRIAL EQUIPMENT NEWS

BREVITY—Identify by IEN - 991 if you write the maker

COMPACT COMFORT-PRODUCER!



"Buffalo" VPC CABINETS provide complete centralized air conditioning in any desired combinations—yet take little space! 3-section construction permits moving into building thru standard doorways—no tearing down walls! And you have a quality unit that will give you dependable service with a minimum of attention. WRITE FOR BULLETIN 4703 and check the construction details like the "Buffalo" mixed-flow hollow shaft fans, the quality Aerofin coils and "Buffalo" Pumps—for accurate control of your plant's climate.

BUFFALO FORGE COMPANY
496 BROADWAY BUFFALO, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

BREVITY—Identify by IEN - 992 if you write the maker

WILLSON Safety Goggles

Keep You on the Safe Side

Style TAW50 for heavy duty with
- WILLSON Super-Tough® lenses
- Comfort-fitting eye cups
- Adjustable chain bridge
- Side screen ventilation
- Lenses easily replaceable

More than 300 other Eye and Respiratory Safety Devices carry this trademark

WILLSON
Dependable Products Since 1870

WILLSON PRODUCTS, INC., 217 Washington St., Reading, Pa.

BREVITY—Identify by IEN - 993 if you write the maker

NEW...

Extremely sensitive
PRESSURE & VACUUM
Switches

TYPES G9 • H9 • J10

These new pressure and vacuum switches are for use in applications in which close on-off differentials and absolutely consistent maintenance of cut-in and cut-out settings are essential in the control of pressure or vacuum. Available are two pressure models and two vacuum models. The Pressure Switches have adjustable ranges from 0-15 psi and adjustable on-off differential from 1" wc-10" wc. They may be furnished as calibrated, micrometer type or uncalibrated for screw driver adjustment.

Electrical ratings at 125/250 V AC between 1200 watts and pilot duty depending on differential. The Vacuum Switches offer adjustable ranges from 30"-0" hg vac with adjustable on-off differential from .2" wc-10" wc. Furnished as calibrated micrometer type or uncalibrated with screw driver adjustment. Electrical ratings of both models 1200 watts at 125/250 V AC.

Special models available for requirements not included in the specifications above.

Write for new bulletin #926 P giving complete details today.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street
Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

BREVITY—Identify by IEN - 994 if you write the maker

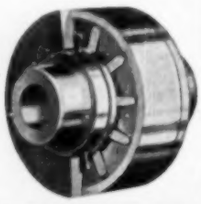
KUSHION-TORK
WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that cause wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever: It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end-play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery.
Send for Bulletin No. 28-N.

Kanti-Lever Couplings

4,000,000 h. p. in Use

MFRS. OF SECTIONAL STOCK RACKS



BROWN ENGINEERING CO.
122 NORTH 3rd ST. READING, PENNA.

BREVITY—Identify by IEN - 995 if you write the maker

FREE SANITARY SURVEY!

Let your Dolge Service Man make a complete sanitary survey of your premises with a view to helping achieve more effective, efficient, economical maintenance.

Send for Booklet No. 12

Dependable DOLGE
WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 996 if you write the maker

Drill More Holes Per Hour
In ANY Pattern... On ANY Drill Press

with a Adjustable MULTI-DRILL

DRILLS 2 to 8 HOLES at ONE STROKE

Increase production up to 800%... save time, cut costs. MULTI-DRILLS make *any* drill press produce *more*. Attached without alterations or special tools. Quick, easy setups of universally adjustable spindles give you more flexibility, wider application. Handles any hole pattern within 9" circle, centers close as ½". Extension Spindles available to increase working area to 22½". Special adaptations available.

model 900

DRILLS ANY HOLE PATTERN

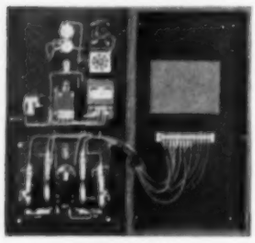
See your Commander Distributor for complete details. Write for the NEW Commander Full Line Catalog #B51.

COMMANDER MFG. CO.
4219 W. Kinzie St. • Chicago 24, Illinois
Product of Commander... Builder of Production Tools

BREVITY—Identify by IEN - 997 if you write the maker

CONTROL . . For engine generator in event of normal power failure

Source: INDUSTRIAL CONTROL PANEL CO.
21-25 W. Hubbard St., Dept. IN, Chicago 10, Ill.



Custom built

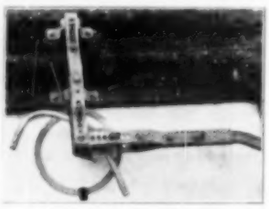
Pantro trade names a new automatic load-transfer control panel with which an engine driving a generator can be started and operated in the event of power failure in a normal supply circuit. Also the control will shut the engine down after a predetermined delay interval when the normal circuit is again energized following correction of a fault. The assembly illustrated is available for operation on 110 or 220-volt 60-cycle single-phase ac. to 15-kva. rating.

The equipment includes a voltage monitor, time-delay and auxiliary relays, load contactor, terminal strip, test switch and a battery charger to keep the engine-starting battery fully charged. This particular assembly is typical of control equipment the company is prepared to design and manufacture for specified applications.

BREVITY—Identify by IEN - 998 if you write the maker

BENDING . . Hand operated unit for use on thin wall conduit to 2 in.

Source: HOSSFELD MFG. CO.
458-62 W. 6th St., Winona, Minn.



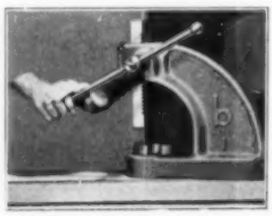
No inside mandrel

New dies have been developed for the company's No. 2 hand-operated bending machine to make wrinkle-free bends in thin-wall conduit from ½ to 2 inches. Sizes measuring 1¼ in. and smaller are made by one movement of the hand lever. A compound lever arrangement is employed for 1½ and 2-in. conduit. In both cases the unit mounts on a bench as shown in the illustration.

BREVITY—Identify by IEN - 999 if you write the maker

PRESS . . Hand arbor unit made in three sizes rating ½ to 2 ton

Source: BENCHMASTER MFG. CO.
1833-37 Rosecrans Ave., Gardena, Calif.



Webs reinforce base

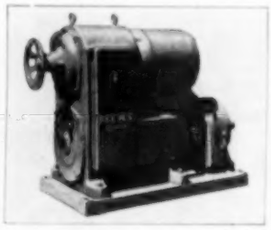
Square ram in this new hand arbor press is fitted with rack teeth that engage a pinion with shaft extending from the side of the housing. The shaft can be equipped with a lever or a hand wheel to specification. Base and column are a one-piece semi-steel casting. Take-up adjustment is provided on the front and the side to maintain ram alignment.

Three sizes known as No. 0, 1 and 2 will take work to 5, 6 and 9 in. over the table and to 7½, 10 and 13¾ in. in diameter. Standard and solid-platen designs are available.

BREVITY—Identify by IEN - 1000 if you write the maker

DRIVE . . Variable speed unit, motor and geared V-belt transmission

Source: REEVES PULLEY CO.
800 N. Wilson St., Columbus, Ind.



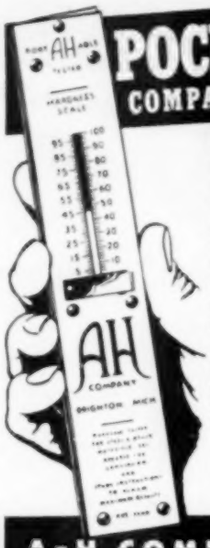
Stepless adjustment

Model 8000 is a new unit in the company's Vari-Speed Motodrive, previously described JEN-1103-50. The motor rates 25 hp. The transmission provides a range of speeds from 2 to 6 to 1 with hand-wheel control as the standard means for speed selection. Electrical or hydraulic controls are available. A tachometer can be supplied. Vertical and horizontal assemblies are included. Base dimensions are about 50 by 30 inches. Overall height is about 43 in. for the illustrated unit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1001 if you write the maker

POCKET-SIZE COMPARATOR TESTER



- A compact, low cost precision tester which will fill a dozen needs in your plant.
- Easily carried anywhere and used on-the-job by anyone.
- Gives accurate surface elasticity readings, easily converted to Rockwell or Brinnell.
- Hundreds in daily use in all types of industry. A trial tester will prove its value.

PRICE $25.50 Plus Tax Including case
F. O. B. BRIGHTON, MICH.

A-H COMPANY, INC.
225 E. Grand River, Brighton, Mich.

BREVITY—Identify by IEN - 1002 if you write the maker

IMMEDIATE DELIVERY
on RCA high-frequency
ELECTRONIC GENERATORS
for soldering, brazing, heat-treating

Available Today . . . NOW. For immediate shipment from RCA, Camden, N. J., direct to your plant. High-frequency electronic generators in sizes of 15 and 75 KW for induction heating of metals.

Big, sturdy high-power units. These generators are heavy-duty "work horses," built to stand up under long, tough production schedules. Time-tested designs. One-unit construction for compact, easy, space-saving installation. Built and backed up by RCA . . . pioneer in high-frequency heating. Nationwide service available through RCA Service Company.

Do you need applicators, too? RCA has developed dozens of different applicators for electronic heating. Ask us about our proved designs . . chances are there is one already worked out to fit your needs.

Generator stock limited. Act NOW. Production of RCA electronic heating units is being stepped up to meet ever-increasing demand. But even so, the supply of completed units for immediate delivery is definitely limited. So if you need electronic heating equipment NOW . . . then NOW is the time to act.

Contact RCA at once. Get your order in fast. First come, first served. Do it NOW.

More Information? Mail Coupon TODAY

RCA Engineering Products Dept. 141X, Camden, N. J.
Without obligation, please air-mail me complete information on your RCA electronic heating equipment *available for immediate delivery*, for the application stated below:

To be used for _____
KW power required _____
Name _____ Title _____
Company _____
Address _____
City _____ State _____

RADIO CORPORATION of AMERICA
CAMDEN, N. J. INDUSTRIAL EQUIPMENT SECTION

▼ BREVITY—Identify by IEN - 1004 if you write the maker ▼

FOR PHENOMENAL SAVINGS IN PLANT LAYOUT

FROM LAYOUT TO BLUEPRINT WITH NO DRAFTING

TemPrints are outline prints on transparent film, reproducing to exact scale the standard machines in your plant or made to engineering specifications of your particular equipment . . . TemPrints are also supplied for walls, partitions, windows, office furniture and shipping equipment. TemPrint Grids are transparent sheets cross-lined to ⅛" or ¼" scale suitable for layout and floor plans. When TemPrints are cutout and applied to the grids, the result is an accurate layout of your plant or office. Any number of duplicate prints accurately reproduced in the same size may then be made by processing through an Ozalid machine.

SIMPLY MAKE THE LAYOUT — AND THE LAYOUT WILL MAKE YOUR PRINTS
TEMPRINTS PUT THE PLAN INTO YOUR PLANT

MARINE SCALE INDUSTRIAL MODELS

Marine has specialized in scale models for many years. Marine Miniatures are accurate reproductions to scale of well-known plant machinery and equipment. All models are dimensionally accurate — may be identified instantly. A special catalog is available on request.

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HARMAN ASSOCIATES
Dept. H-I, Halesite, L. I., N. Y.

▼ BREVITY—Identify by IEN - 1005 if you write the maker ▼

New...improved RESINOID DISC WHEELS

Type "F" identifies the new, improved line of resinoid disc wheels by CARBORUNDUM now producing such outstanding results. They are highly accurate in double disc grinding of parallel flat surfaces to close tolerances. Also used increasingly on single side flattening of castings, stampings and forgings. Have versatile grinding action essential in handling wide variations in work areas and materials.

Advanced manufacturing techniques assure product duplication for volume users where high production rates, close tolerances, disc life and uniform finish are essential. Here is a line of new resinoid disc wheels you can use to advantage. Ask your CARBORUNDUM representative or write Dept. IEN 81-51.

5-WAYS BETTER
- UNIFORMITY
- CUTTING QUALITIES
- OVERALL LIFE
- PERFORMANCE
- VERSATILITY

Only CARBORUNDUM
TRADE MARK

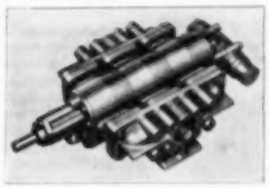
makes ALL abrasive products ...to give you the proper ONE

"Carborundum" and "Alusite" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

▼ BREVITY—Identify by IEN - 1007 if you write the maker ▼

PUMP . . Rotary gear type for elevator service or similar duty

Source: GEO. D. ROPER CORP.
303 Blackhawk Park, Rockford, Ill.



Details in Bulletin No. 20

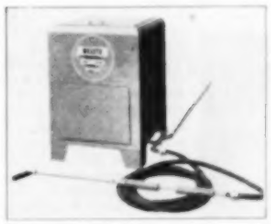
Single, double and triple pumping-gear assemblies are included in the company's Model-K line of gear-type rotary pumps. The line was initially designed to power hydraulic elevator installations. It is available now for general duty wherever quiet operations, positive flow and smooth steady action are required.

Rated capacity at 300-lb. pressure for the single-gear unit is 33 gpm. at 1,200 rpm. It is double this amount at the same speed and pressure for the double unit and 73 gpm. at 1,200 rpm. and 300 lb. for the triple-gear assembly shown in the illustration. It measures about 23 in. in overall length in plain design or 25⅝ in. when a built-in relief valve is included as shown in the right-hand end of the illustration.

▼ BREVITY—Identify by IEN - 1008 if you write the maker ▼

CLEANING . . Steam spray machine takes steam pressure from a shop line

Source: KELITE PRODUCTS INC.
1248-52 N. Main St., Los Angeles 12, Calif.



Includes 25 ft. hose

Fireless designates new steam-spray machine in the company's line in which steam is taken from a shop source rather than being generated in the equipment itself. Two models rate 150 and 200 gph., both employing motor-driven pumps for positive delivery of the liquid cleaning compound for mixture with the dry steam and delivery at the Hy-Vel nozzle.

▼ BREVITY—Identify by IEN - 1009 if you write the maker ▼

LIGHTING . . Control panel to dim, brighten, blend illumination

Source: SUPERIOR ELECTRIC CO.
951 Domers Ave., Bristol, Conn.

Each is custom assembled

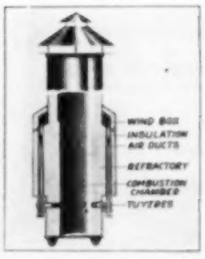
Luxtrol trade names a new panel assembly of miniature positioner stations connecting to corresponding motor-driven Powerstat dimming equipment, previously described IEN-3933-48. The control assembly can be located as desired with the actual dimming equipment in any convenient place. Lights can be dimmed, brightened or blended.

The equipment also can be set to dim or brighten a lighting installation at a required time. Each miniature station is graduated to read illumination intensity for a given setting. Complete programs can be set in advance.

▼ BREVITY—Identify by IEN - 1010 if you write the maker ▼

MELTING . . Foundry cupola is designed to preheat its own air

Source: NORTH STATE PYROPHYLLITE CO.
51 Industrial Ave., Pomona, N. C.



Any size you want

Available to order, this new Trumelt cupola mounts its wind box at the top of the combustion chamber. It employs air ducts leading down inside the shell to tuyeres near the bottom so preheated air can be introduced into the combustion chamber. No additional preheating equipment is required so cost to install the new cupola is in the same price range as a conventional design. It also is possible, in certain cases, to install the Trumelt combustion chamber in a standard design of cupola shell now in service.

Coke ratio can be maintained as high as 18 to 1. A typical installation lined to a 30-in. diameter operates on a melting rate of 5 ton per hr. as an example of capacity.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 1011 if you write the maker ▼

New Recording Voltmeters and Ammeters

The Latest Developments in Electrical Measurement

Outstanding for
- High actuating torque
- Stability of calibration
- Low electrical burden
- Dependable accuracy

Bristol Series 500 Recording Voltmeters and Ammeters give you these features—plus a number of refinements for convenient operation and servicing.

The new moving-iron measuring mechanism is a type known for high actuating torque and low electrical burden . . . refined by Bristol engineers for greater accuracy and ruggedness.

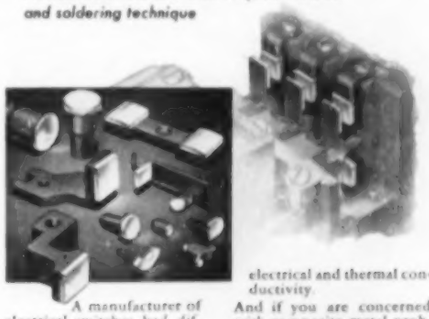
Write for Bulletin E1111, to THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL
AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

▼ BREVITY—Identify by IEN - 1012 if you write the maker ▼

PROBLEM:
How to braze silver contact to base metal to get maximum bond area

GENERAL PLATE
Provided the solution with a special solder and soldering technique



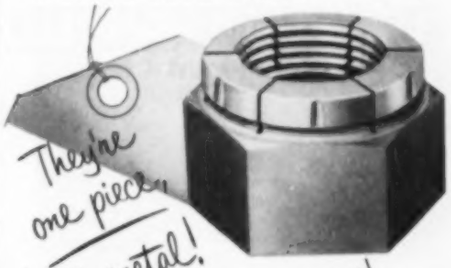
A manufacturer of electrical switches had difficulty in obtaining the required bond area in brazing a silver contact to a base metal part.

The problem was presented to General Plate engineers who provided the solution by developing a special solder and soldering technique. The result was a joint with 85% bond area which provided the necessary strength and electrical and thermal conductivity.

And if you are concerned with composite metal problems, it will pay you to talk with General Plate. Their vast experience in cladding precious to base metals, or base to base metals can overcome your problems...often reduce costs. Write for information.

GENERAL PLATE
Division of Metals & Controls Corp.
71 Forest Street, Attleboro, Mass.

▼ BREVITY—Identify by IEN - 1013 if you write the maker ▼

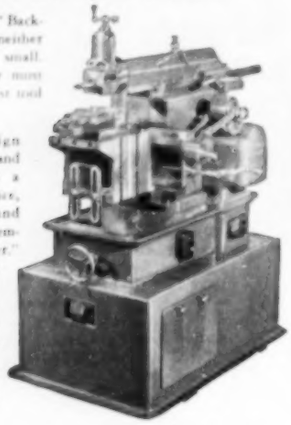


Because FLEXLOC Self-Locking Nuts are one piece, all metal, they save in assembly, purchasing and stocking as compared with lock washers. Because FLEXLOC Nuts are both stop and lock nuts, they *lock* and *stay locked* in any position on a threaded member. Samples available upon request. Just let us know the size you need. STANDARD PRESSED STEEL CO., Jenkintown 14, Pennsylvania.

FLEXLOC LOCKNUT DIVISION **sps** JENKINTOWN PENNSYLVANIA

▼ BREVITY—Identify by IEN - 1014 If you write the maker ▼

Big Shaper Performance Small Shaper Price



The SHELDON 12" Back-Geared Shaper is neither too big, nor too small. It is just right for most shaper work in most tool rooms and shops.

In weight, design features, capacity and performance, it is a "big shaper." In price, operating cost and floor space, it resembles a "small shaper." It is the logical 1st shaper for the small shop and a cost-cutting tool in multiple installations in large plants.

Write for Catalog.

SHELDON
CHICAGO

SHELDON MACHINE CO., Inc., 4208 N. Knox Ave., Chicago 41, Illinois

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Brand New

• non-ferrous zinc alloy • rustproof and corrosion-resistant • die cast (not headed!) to closer tolerances with more uniform heads for greater riveting efficiency • recommended where shear and tensile strength of steel is not required • in all commercial finishes at substantial savings • usable unfinished for greater economies

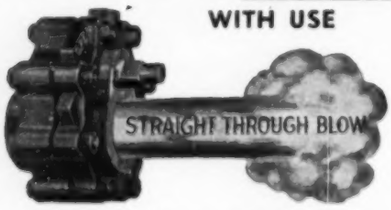
PROMPT DELIVERY on standard sizes: 1/16" to 9/64" dia.; up to 5/16" lgth. Specials to order

Write for bulletin, samples, prices.

GRIES REPRODUCER CORP.
791 E. 132nd St., New York 54 • Phone MO 5-7480

▼ BREVITY—Identify by IEN - 1016 If you write the maker ▼

The Valve that IMPROVES WITH USE



In the EVERLASTING VALVE, the disc is always in contact with the sealing surface of the seat. Each time the valve is opened or closed, the disc moves across the seat with a rotating motion, and this self-lapping action continuously polishes the sealing faces, keeping the seal drop-tight.

And note these additional EVERLASTING features . . . straight-through flow . . . no lubrication required . . . quick operation . . . non-wedging. These unique valves are ideal for all blow-off, shut-off, equipment outlets and many other services, and are suitable for all liquids, vapors and gases. Write for bulletin today.

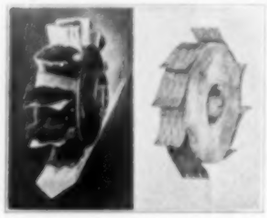
EVERLASTING VALVE CO., 49 Fisk Street, Jersey City 5, N. J.
Trade Mark "EVERLASTING" Reg. U. S. Pat. Off.

Everlasting Valves
for everlasting protection

▼ BREVITY—Identify by IEN - 1017 If you write the maker ▼

SANDING . . Rotating head carries brush-backed abrasive strips

Source: MERIT PRODUCTS INC.
4021-25 Irving Place, Culver City, Calif.



Diameter about 5 inches

New design of scored abrasive is now available as a refill cartridge for the company's brush-backed sanding head, previously described IEN-7156-51. The abrasive cloth is cut in staggered rows to improve its pliability. Lengths of the strip are then wound on a central core as shown to the right in the illustration. They flex as shown to the left.

The core applies in the head after the end flange has been removed so each abrasive strip comes in front of a small brush that serves to back it up. As the abrasive is used up the head is loosened and the strips pulled out so the worn ends can be cut off to present fresh working surfaces. The cartridges are available in a range of grits.

▼ BREVITY—Identify by IEN - 1018 If you write the maker ▼

FASTENING . . Locknut holds by spring action, to ¼ inch

Source: E. A. BEESOM CORP.
125-29 Margin St., Salem, Mass.

Note the ribs

Formed ribs on the body of this new Con-Torq locknut provide spring action that holds the nut securely in place when it is turned into position on a bolt or a stud. The ribs also present shoulders to engage a wrench. Each nut is heat treated to spring temper and carries an integral flange. It can be round as shown in the illustration, elongated or angular as for a corner assembly.

Material can be specified in heat-treated steel or bronze. Zinc plating is standard. The nut is carried in stock in ¼-in. 20 or ¼-in. 28 sizes. Other sizes are available to order between No. 2 and ⅝ inch.

▼ BREVITY—Identify by IEN - 1019 If you write the maker ▼

LIGHTING . . How a fluorescent ballast works described by cartoon figure and simple text in booklet

General Electric Co.
Dept. 6X-201, Schenectady 5, N. Y.

Flora—short for Fluorescent Ballast—is the narrator and central figure in new 20-page Bulletin GEA-5731. She tells how the ballast steadies and helps to start a fluorescent lamp, how a fluorescent lamp operates, how inductive ballasts and starters operate, two-lamp ballasts and their circuits. You may be interested to see how informal treatment can be made of a technical subject.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 1020 If you write the maker ▼

Did You Know That . . .

Your company is continuously invited to send information on all new and improved products which you develop for use in industry to Editor Bill Irish for editorial description in this publication at no cost or obligation.

What does your company have that's new or news for industry?

Have it sent now to . . .

W. E. IRISH, *Editor & V. P.*

INDUSTRIAL EQUIPMENT NEWS
THOMAS PUBLISHING COMPANY
461 EIGHTH AVENUE NEW YORK 1, N. Y.

▼ BREVITY—Identify by IEN - 1021 If you write the maker ▼

FREE PROOF In Your Own Plant!

Yours to Use FREE for 3 Days

To Prove You Can Add Man-Hours Without Increasing Workload of Personnel

All industry is using this service-proved Electric Truck . . . a brawny midget of power that moves up to 6000 pounds with amazing "touch-of-the-finger" ease. It's saving industry millions of dollars every year, offers many features which mean better performance, less maintenance, lower operating costs . . . extra savings in smooth, trouble-free material handling.

But don't take our word for it! Put "101" Transporter to the test . . . put it over the severest hauling hurdles *on your own plant, absolutely free and without obligation!* Write today and we'll arrange delivery for your 3 days' trial. First come, first served. No obligation to buy . . no strings attached.

"101" Transporter — A PRODUCT OF AUTOMATIC

Automatic
109 West 87th Street, Dept. A-2, Chicago 20, Illinois

▼ BREVITY—Identify by IEN - 1022 If you write the maker ▼

STRETCH-FORM FOR STRENGTH AND PRODUCTION WITH . . . BATH UNIVERSAL CONTOUR FORMERS

Now . . . aircraft components* can be formed at high production rate with the powerful **Bath** universal contour former. Blanks of any metal or alloy can be formed to extremely exacting tolerances in one operation. Forming bends of more than 360° and varying curves, *the* **Bath** *machine produces in one operation parts that previously were assembled from separate sections.*

Extruded, rolled, pressed or brake-formed cross sections in any length can be shaped on the **Bath** universal contour former. Twelve models are available with capacities ranging from 12½ to 150 tons to meet every metal contour forming requirement.

*Jet flange rings, shrouds, cases, flame tubes, stiffeners and casings formed in either full circles or segments.

THE CYRIL BATH COMPANY
6935 MACHINERY AVENUE • CLEVELAND 3, OHIO

▼ BREVITY—identify by IEN - 1024 if you write the maker ▼

Now—have a spic and span floor around machines!

Here's a flooring tip for the man who likes his plant to look as neat as his office.

Tuff-Tex* is a unit-laid, plastic-asbestos tile which is *highly resistant to greases and oils.*

It withstands heavy traffic, has high flexural strength, can take floor vibrations. It also resists impact from dropped objects.

Left unwaxed, Tuff-Tex provides safe, non-slip footing.

Quickly installed, easily cleaned, it is proving a "natural" for commercial kitchens, laboratories, service stations and such places as well as for factory areas.

FREE literature shows the wide range of colors. Write THE TILE-TEX DIVISION, The Flintkote Company, 1234 McKinley St., Chicago Heights, Ill.

AND FOR THE OFFICE, USE TILE-TEX®. . . THE QUALITY ASPHALT TILE

TILE-TEX FLOORING PRODUCTS

▼ BREVITY—identify by IEN - 1025 if you write the maker ▼

How Much is YOUR PLANT losing because of

POOR VISION?

A sampling test, of a few of your own employees, will show how a Visual Testing program will give you the results that thousands of plants are reporting:

LOWER production costs and training costs; lower labor turnover; less spoilage; reduced accidents and insurance rates.

INCREASED efficiency, larger profits; increased employee satisfaction.

Write for *sample test* of a few of your below-average employees—or for *"What You Can Expect from a Good Vision Program,"* by a prominent industrial personnel director.

KEYSTONE VIEW COMPANY, Meadville, Penna. Established 1892. Originators of Binocular Vision Testing in Industry.

KEYSTONE *Occupational Visual Service*

▼ BREVITY—identify by IEN - 1026 if you write the maker ▼

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SYNTHETIC RUBBER AND SILICONE

FOR THAT EXTREME HIGH OR LOW TEMPERATURE JOB SILICONE RUBBER IS THE ANSWER

BONDING OF RUBBER TO METAL

ADVANCE RUBBER CO. INC.

1702 Washington Ave. No., Minneapolis, Minn.

AL 4717

PRODUCT INDEX

How to find what you need:

Leaf through the issue with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

Next use this index to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

Now take one subject at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

If you have trouble in finding the answer to your current problem through the subjects in this issue, let us know. We can name sources of supply with the help of our nineteen-year index of all products that have appeared in IEN. Any question we cannot answer will be published in our "I Wish I Had" column to invite suggestions.

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▼ BREVITY—identify by IEN - 1027 if you write the maker ▼

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There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO ALUMINUM SPEED SCALE

For increased production at lower cost! One operator with one Speed Scale does as much as two operators with ordinary scales. Sturdy, precision built, super-accurate. Ends overweight losses.

Write for Literature

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MAKERS OF FINE SCALES SINCE 1900

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SCALE ENGINEERS IN ALL PRINCIPAL CITIES

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. . . More and More, it's Motch & Merryweather **SEGMENTAL SAW BLADES** for cutting off **LARGER** STOCK!

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Faster cutting with accuracy and safety—that means higher *usable* production. Get these results every time with the Triple-Chip Method and M. & M. segmental saw blades. Our "Hi-Lo" alternately wide-and-narrow tooth grind breaks up chip loads, disperses strains, minimizes breakage, hangs up new production records in cutting off large stock.

Get our Circular Sawing Handbook.

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PENTON BUILDING • CLEVELAND 13, OHIO

COMMAND OUR UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

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IN QUALITY PRODUCTS EVERYWHERE . . .

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GUARDIAN ELECTRIC
1620-A W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

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standardize with standard

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OTHER HALLOWELL FEATURES

- Sturdy, rigid construction requires no bolting to the floor
- 4 lengths, 3 widths and 3 heights—all standard
- 3 top materials—steel, Presswood on steel, and laminated wood
- Assemble them as single units or bolt them together to form a continuous bench of any length
- Functional design and neat appearance

Standardized work benches, with *standard* unit accessories, permit you to *custom build* your HALLOWELL Work Benches at a fraction of the cost of *building your own.* Write for descriptive literature. STANDARD PRESSED STEEL Co., Jenkintown 14, Pennsylvania.

HALLOWELL SHOP EQUIPMENT DIVISION

sps

JENKINTOWN PENNSYLVANIA

BREVITY—Identify by IEN - 1031 If you write the maker

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Ruberoid makes every type of built-up roof—Smooth Surfaced Asbestos, Coal Tar Pitch with gravel or slag surfacing, and smooth or gravel and slag surfaced Asphalt — in specifications to meet your every need. Ruberoid Approved Roofers are not prejudiced in favor of any one type. You are assured of uniform quality, centralized responsibility, and more economical operation with Ruberoid Built-Up Roofings. Write for Ruberoid's free Built-Up Roofing Specification Book and Roof Selector. The Ruberoid Co., 500 Fifth Ave., New York 18, N.Y.

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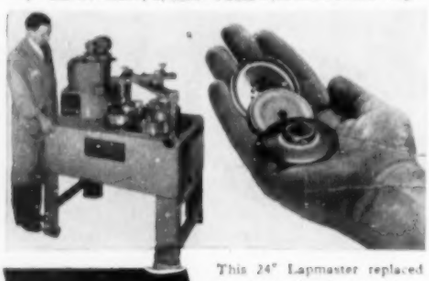

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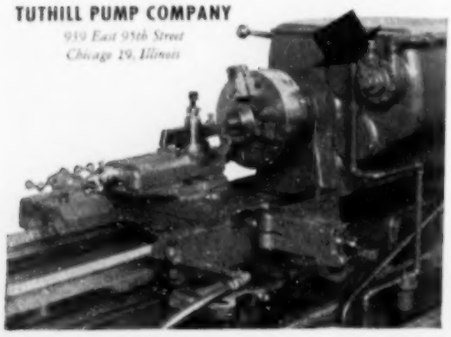

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The Flexible Self-Contained
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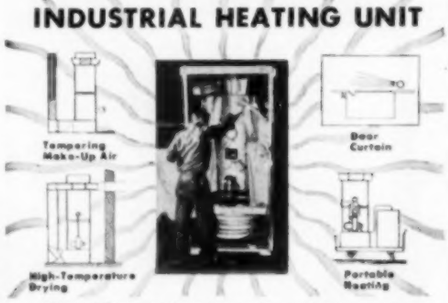

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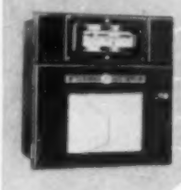

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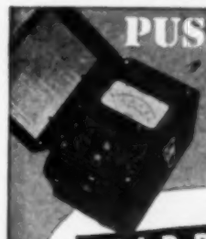
▼ BREVITY—Identify by IEN - 1041 If you write the maker ▼

PUSH BUTTON INSULATION RESISTANCE TESTING



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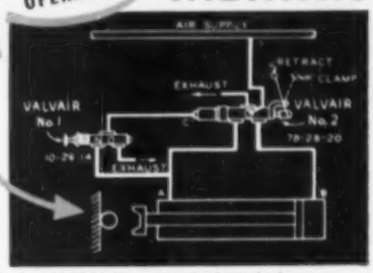

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"I WISH I HAD"

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ENGINEER . . "I wish I had contact with a firm requiring a plant or executive engineer with 7 years of experience. I am presently employed in Massachusetts." **IEN W-1**

ENGINEER . . "I wish I had contact with a manufacturer needing a mechanical engineer, experienced in product design and development and in possession of various patents of industrial and consumer products. I am 31 years old and at present a military reserve officer on active duty. I expect to be released shortly after January 1st." **IEN W-2**

FOREMAN . . "I wish we had a foreman to take charge of our Bright Basic wire shop manufacturing wire items including display racks and similar products. The work is steady. We are located in Los Angeles." **IEN W-3**

LOAD BINDER . . "I wish we had a source of supply for a hydraulic load binder to replace the so-called 'come along' load binders that are commonly used to keep cylindrical objects in a rigid, compact group on a truck bed." **IEN W-4**

MILLING . . "I wish we had a source for immediate purchase of a used Wardwell No. 90-FM automatic flute milling machine. We need it for our Brooklyn, N. Y. plant." **IEN W-5**

PRODUCT WANTED . . "I wish we had a consumer product, not too costly to manufacture, that can be produced in our well-equipped machine shop and assembly department. We would be interested in taking it over on a license agreement or outright sale to add to our present line of special machinery manufacture. We are located in Western New York." **IEN W-6**

SURPLUS . . "I wish we had a buyer for all or a part of our surplus stock of 550 drums, each containing 53 gal., of strippable vinyl dispersion composed of polyvinyl chloride-acetate co-polymer dispersed in methyl ethyl ketone and containing a plasticizer and rust inhibitor. The solution is clear and can be sprayed. It is suited to protect metal surfaces from corrosion and abrasion, to seal warehouses prior to fumigation, to coat paper bags and fiber drums to make them water proof and to coat cordage and clothes lines to protect them against rot. The drums are in storage in New York. List price is $1.75 per gallon." **IEN W-7**

SURPLUS . . "I wish we had a buyer for a new Leeds & Northrup Model D12 point temperature indicator with a range between 0 and 500 deg. F. Included is a dc. thermocouple, metal case with gasketed door for flush mounting and internal fluorescent illumination. The instrument is at present in Wallingford, Conn." **IEN W-8**

JIGS . . "I wish we had contact with companies west of the Mississippi to design and build fixtures and jigs for aircraft production in California." **IEN W-9**

BREVITY—identify by IEN - 1048 if you write the maker

we've made billions of set screws for everything from autos to washing machines

In One Year, Over 125 Manufacturers have adopted ZIP-GRIP* Self-Locking SET SCREWS

Back of this is our 16-year record of supplying STANDARD SET SCREWS to over 1200 American Manufacturers

Set Screw engineers were well-prepared to furnish the first real Self-Locking Set Screw, because of experience since 1935, with puzzling set screw problems.

get the FREE Demonstrator and —demonstrate for yourself how conventional set screws (which we can supply in all popular sizes and materials) do not lock until they reach the shaft, and when you have a vibration or close adjustment problem, you need ZIP-GRIP*.

With the FREE Demonstrator you get a data sheet and offer of engineering test samples to try out on your puzzling set screw problems. Write today.

*Pat. Pending

Makers of Socket and Headless SET SCREWS

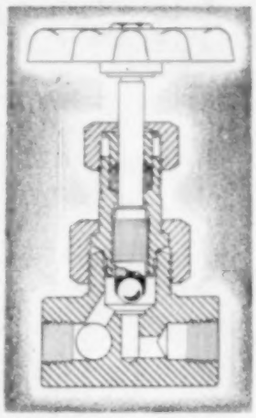
Set Screw & Mfg. Co.
5 Main St. Bartlett, Ill. (Chicago suburb)

We specialize in Solving Puzzling Set Screw Problems.

BREVITY—identify by IEN - 1049 if you write the maker

NEW!

BALL VALVE for liquids, gas or steam



Here's a radically-new forged steel valve for general heavy industrial use. Can't leak . . . practically never wears out . . . costs little or no more than ordinary valves!

In place of a disc or plug, the new Foxboro Ball Valve has a retained, free-rolling stainless steel ball that exposes new surface to seat at every closing.

Foxboro Ball Valves handle pressures to 3000 psi. Available in straight-thru and angle types. Two or four connections to simplify piping. ¼" size. Write for detailed folder. The Foxboro Company, 421 Neponset Avenue, Foxboro, Mass., U. S. A.

FOXBORO INSTRUMENTATION

BREVITY—identify by IEN - 1050 if you write the maker

How to measure a folding rule—

Compare a Stanley "Green End" with any other folding rule. See how much more real rule value there is in a rule that has "Green Ends". Famous Stanley "Zig-Zag", "Pull-Push" and Boxwood rules are available in a wide variety of styles, sizes and markings for every industrial need. Call your distributor.

Handy
Pocket size. Opens as needed, up to 6'.

Greater Accuracy
"Ball-socket" action locks joints, prevents "stretching or jack-knifing".
Exceeds U. S. Govt. standards for accuracy.

Longer Wearing
Rust-resistant nickel silver joints — longest wearing of any folding rule.
New plastic coating on all sticks — wears four times longer.
Select rock maple sticks — tough and flexible.

Easier Reading
Large, black markings on white finish. Graduated in inches and 16ths all edges.

Stanley Tools, New Britain, Conn.

THE TOOL BOX OF THE WORLD STANLEY
Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—identify by IEN - 1051 if you write the maker

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Hard Mastic
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FIRE-RESISTANT • RESTFUL • QUIET
SLIPROOF • SANITARY

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